

PROJECT MANUAL

FOR



NEW AFFORDABLE HOUSING ON VACANT LOTS, PHASE 1

ITB number 25-002

Prepared for:

Jefferson Parish Housing Services Development District (JPHSDD)
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121 Paillet Drive
Harvey LA 70053

Prepared by:

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Architect's Project Number: 25-006

July 23, 2025

This Project Manual is applicable to work at the following seven properties located in Marrero, unincorporated Jefferson Parish, Louisiana.

1. 1440 & 1442 Mansfield Avenue
2. 1444 & 1446 Mansfield Avenue
3. 1234 & 1236 Marshall Drive
4. 6108 Fourth Avenue
5. 6100A & 6100B Fifth Avenue
6. 6126 Sixth Avenue
7. 6204 Sixth Avenue

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**FOR
JEFFERSON PARISH HOUSING SERVICES DEVELOPMENT DISTRICT (JPHSDD)**

**INVITATION TO BID (ITB) #25-002
for the project:**

NEW AFFORDABLE HOUSING ON VACANT LOTS, PHASE 1

The Jefferson Parish Housing Services Development District (JPHSDD) invites bids to construct seven (7) new houses on vacant lots in unincorporated Jefferson Parish. Bids will be received until 10:00 AM, Central Daylight Time (CDT), on Tuesday, August 19, 2025, at its offices, 121 Paillet Drive, Harvey, LA, at which time and place said proposals will be publicly opened and read aloud. Any bid received after the announced closing time will be returned unopened.

All proposals must be submitted in a sealed envelope bearing the Bidder's name, address, and State Contractor's license number and must be addressed as follows:

**JPHSDD
Attn: ITB #25-002
121 Paillet Dr
Harvey LA 70052**

Failure to have the license number on the outside of the envelope will be cause for rejection of the bid; it will be returned unopened.

Bids must be submitted on the forms furnished with the Bidding Documents.

Bids shall be accepted from Contractors who are licensed under LA. R.S. 37:2150-2192 for the classification of Building Construction or the classification of Residential Building Contractor. Bidders are required to comply with provisions and requirements of Louisiana Revised Statutes 38:2212.

All bids must be accompanied by bid security equal to five percent (5%) of the sum of the base bid and all additive alternates, and must be in the form of a certified check, cashier's check, or a Bid Bond written by a surety company licensed to do business in Louisiana, signed by the surety's agency or attorney-in-fact. Surety must be listed on the current U.S. Department of the Treasury Financial Management Service list of approved bonding companies as approved for an amount equal to or greater than the amount for which it obliges itself in the Bond, or must be a Louisiana domiciled insurance company with at least an A-rating in the latest printing of the A.M. Best's Key Rating Guide. If surety qualifies by virtue of its Best's listing, the amount of the Bond may not exceed ten percent

(10%) of policyholders' surplus as shown in the latest A.M. Best's Key Rating Guide. The Bid Bond shall be in favor of the Jefferson Parish Housing Services Development District, and shall be accompanied by appropriate power of attorney. No Bid Bond indicating an obligation of less than five percent (5%) by any method is acceptable.

No more than 10 calendar days after the bid opening, the apparent low Bidder shall be required to furnish other documents as described in the Bidding Documents.

A mandatory pre-bid conference at which time the scope of the project, contract time, and other requirements of the Bidding and Contract Documents may be discussed, along with any other special requirements of the project, will be held at the JPHSDD offices, 121 Paillet Drive, Harvey, LA, at 10:00 AM, Central Daylight Time (CDT) on Thursday, August 7, 2025. A site visit with the Architect will follow the Pre-Bid Conference.

Bidding Documents are available at no charge in digital PDF format. Bidders shall download the Bidding Documents from the online Project Plan Room of the City Blueprint & Supply Company, website: <http://cityblueprint.com>.

To the extent permitted by applicable state and federal laws and regulations, the JPHSDD reserves the right to reject any and/or all bids for just cause.

The Jefferson Parish Housing Services Development District

Dorian Rawles, Executive Director

Publish Dates:

July 23, 2025

July 30, 2025

August 6, 2025

**U.S. Department of Housing and
Urban Development**
Office of Public and Indian Housing

**Instructions to Bidders for Contracts
Public and Indian Housing Programs**

Instructions to Bidders for Contracts

Public and Indian Housing Programs

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1. Bid Preparation and Submission

(a) Bidders are expected to examine the specifications, drawings, all instructions, and, if applicable, the construction site (see also the contract clause entitled **Site Investigation and Conditions Affecting the Work** of the *General Conditions of the Contract for Construction*). Failure to do so will be at the bidders' risk.

(b) All bids must be submitted on the forms provided by the Public Housing Agency/Indian Housing Authority (PHA/IHA). Bidders shall furnish all the information required by the solicitation. Bids must be signed and the bidder's name typed or printed on the bid sheet and each continuation sheet which requires the entry of information by the bidder. Erasures or other changes must be initialed by the person signing the bid. Bids signed by an agent shall be accompanied by evidence of that agent's authority. (Bidders should retain a copy of their bid for their records.)

(c) Bidders must submit as part of their bid a completed form HUD-5369-A, "Representations, Certifications, and Other Statements of Bidders."

(d) All bid documents shall be sealed in an envelope which shall be clearly marked with the words "Bid Documents," the Invitation for Bids (IFB) number, any project or other identifying number, the bidder's name, and the date and time for receipt of bids.

(e) If this solicitation requires bidding on all items, failure to do so will disqualify the bid. If bidding on all items is not required, bidders should insert the words "No Bid" in the space provided for any item on which no price is submitted.

(f) Unless expressly authorized elsewhere in this solicitation, alternate bids will not be considered.

(g) Unless expressly authorized elsewhere in this solicitation, bids submitted by telegraph or facsimile (fax) machines will not be considered.

(h) If the proposed contract is for a Mutual Help project (as described in 24 CFR Part 905, Subpart E) that involves Mutual Help contributions of work, material, or equipment, supplemental information regarding the bid advertisement is provided as an attachment to this solicitation.

2. Explanations and Interpretations to Prospective Bidders

(a) Any prospective bidder desiring an explanation or interpretation of the solicitation, specifications, drawings, etc., must request it at least 7 days before the scheduled time for bid opening. Requests may be oral or written. Oral requests must be confirmed in writing. The only oral clarifications that will be provided will be those clearly related to solicitation procedures, i.e., not substantive technical information. No other oral explanation or interpretation will be provided. Any information given a prospective bidder concerning this solicitation will be furnished promptly to all other prospective bidders as a written amendment to the solicitation, if that information is necessary in submitting bids, or if the lack of it would be prejudicial to other prospective bidders.

(b) Any information obtained by, or provided to, a bidder other than by formal amendment to the solicitation shall not constitute a change to the solicitation.

3. Amendments to Invitations for Bids

(a) If this solicitation is amended, then all terms and conditions which are not modified remain unchanged.

(b) Bidders shall acknowledge receipt of any amendment to this solicitation (1) by signing and returning the amendment, (2) by identifying the amendment number and date on the bid form, or (3) by letter, telegram, or facsimile, if those methods are authorized in the solicitation. The PHA/IHA must receive acknowledgement by the time and at the place specified for receipt of bids. Bids which fail to acknowledge the bidder's receipt of any amendment will result in the rejection of the bid if the amendment(s) contained information which substantively changed the PHA's/IHA's requirements.

(c) Amendments will be on file in the offices of the PHA/IHA and the Architect at least 7 days before bid opening.

4. Responsibility of Prospective Contractor

(a) The PHA/IHA will award contracts only to responsible prospective contractors who have the ability to perform successfully under the terms and conditions of the proposed contract. In determining the responsibility of a bidder, the PHA/IHA will consider such matters as the bidder's:

- (1) Integrity;
- (2) Compliance with public policy;
- (3) Record of past performance; and
- (4) Financial and technical resources (including construction and technical equipment).

(b) Before a bid is considered for award, the bidder may be requested by the PHA/IHA to submit a statement or other documentation regarding any of the items in paragraph (a) above. Failure by the bidder to provide such additional information shall render the bidder nonresponsible and ineligible for award.

5. Late Submissions, Modifications, and Withdrawal of Bids

(a) Any bid received at the place designated in the solicitation after the exact time specified for receipt will not be considered unless it is received before award is made and it:

(1) Was sent by registered or certified mail not later than the fifth calendar day before the date specified for receipt of offers (e.g., an offer submitted in response to a solicitation requiring receipt of offers by the 20th of the month must have been mailed by the 15th);

(2) Was sent by mail, or if authorized by the solicitation, was sent by telegram or via facsimile, and it is determined by the PHA/IHA that the late receipt was due solely to mishandling by the PHA/IHA after receipt at the PHA/IHA; or

(3) Was sent by U.S. Postal Service Express Mail Next Day Service - Post Office to Addressee, not later than 5:00 p.m. at the place of mailing two working days prior to the date specified for receipt of proposals. The term "working days" excludes weekends and observed holidays.

(b) Any modification or withdrawal of a bid is subject to the same conditions as in paragraph (a) of this provision.

(c) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent either by registered or certified mail is the U.S. or Canadian Postal Service postmark both on the envelope or wrapper and on the original receipt from the U.S. or Canadian Postal Service. Both postmarks must show a legible date or the bid, modification, or withdrawal shall be processed as if mailed late. "Postmark" means a printed, stamped, or otherwise placed impression (exclusive of a postage meter machine impression) that is readily identifiable without further action as having been supplied and affixed by employees of the U.S. or Canadian Postal Service on the date of mailing. Therefore, bidders should request the postal clerk to place a hand cancellation bull's-eye postmark on both the receipt and the envelope or wrapper.

(d) The only acceptable evidence to establish the time of receipt at the PHA/IHA is the time/date stamp of PHA/IHA on the proposal wrapper or other documentary evidence of receipt maintained by the PHA/IHA.

(e) The only acceptable evidence to establish the date of mailing of a late bid, modification, or withdrawal sent by Express Mail Next Day Service-Post Office to Addressee is the date entered by the post office receiving clerk on the "Express Mail Next Day Service-Post Office to Addressee" label and the postmark on both the envelope or wrapper and on the original receipt from the U.S. Postal Service. "Postmark" has the same meaning as defined in paragraph (c) of this provision, excluding postmarks of the Canadian Postal Service. Therefore, bidders should request the postal clerk to place a legible hand cancellation bull's eye postmark on both the receipt and Failure by a bidder to acknowledge receipt of the envelope or wrapper.

(f) Notwithstanding paragraph (a) of this provision, a late modification of an otherwise successful bid that makes its terms more favorable to the PHA/IHA will be considered at any time it is received and may be accepted.

(g) Bids may be withdrawn by written notice, or if authorized by this solicitation, by telegram (including mailgram) or facsimile machine transmission received at any time before the exact time set for opening of bids; provided that written confirmation of telegraphic or facsimile withdrawals over the signature of the bidder is mailed and postmarked prior to the specified bid opening time. A bid may be withdrawn in person by a bidder or its authorized representative if, before the exact time set for opening of bids, the identity of the person requesting withdrawal is established and the person signs a receipt for the bid.

6. Bid Opening

All bids received by the date and time of receipt specified in the solicitation will be publicly opened and read. The time and place of opening will be as specified in the solicitation. Bidders and other interested persons may be present.

7. Service of Protest

(a) Definitions. As used in this provision:

"Interested party" means an actual or prospective bidder whose direct economic interest would be affected by the award of the contract.

"Protest" means a written objection by an interested party to this solicitation or to a proposed or actual award of a contract pursuant to this solicitation.

(b) Protests shall be served on the Contracting Officer by obtaining written and dated acknowledgement from —

Westwego Housing Authority
Attention: Executive Director
1010 Sixth Street
Westwego, LA 70094

[Contracting Officer designate the official or location where a protest may be served on the Contracting Officer]

(c) All protests shall be resolved in accordance with the PHA's/IHA's protest policy and procedures, copies of which are maintained at the PHA/IHA.

8. Contract Award

(a) The PHA/IHA will evaluate bids in response to this solicitation without discussions and will award a contract to the responsible bidder whose bid, conforming to the solicitation, will be most advantageous to the PHA/IHA considering only price and any price-related factors specified in the solicitation.

(b) If the apparent low bid received in response to this solicitation exceeds the PHA's/IHA's available funding for the proposed contract work, the PHA/IHA may either accept separately priced items (see 8(e) below) or use the following procedure to determine contract award. The PHA/IHA shall apply in turn to each bid (proceeding in order from the apparent low bid to the high bid) each of the separately priced bid deductible items, if any, in their priority order set forth in this solicitation. If upon the application of the first deductible item to all initial bids, a new low bid is within the PHA's/IHA's available funding, then award shall be made to that bidder. If no bid is within the available funding amount, then the PHA/IHA shall apply the second deductible item. The PHA/IHA shall continue this process until an evaluated low bid, if any, is within the PHA's/IHA's available funding. If upon the application of all deductibles, no bid is within the PHA's/IHA's available funding, or if the solicitation does not request separately priced deductibles, the PHA/IHA shall follow its written policy and procedures in making any award under this solicitation.

(c) In the case of tie low bids, award shall be made in accordance with the PHA's/IHA's written policy and procedures.

(d) The PHA/IHA may reject any and all bids, accept other than the lowest bid (e.g., the apparent low bid is unreasonably low), and waive informalities or minor irregularities in bids received, in accordance with the PHA's/IHA's written policy and procedures.

(e) Unless precluded elsewhere in the solicitation, the PHA/IHA may accept any item or combination of items bid.

(f) The PHA/IHA may reject any bid as nonresponsive if it is materially unbalanced as to the prices for the various items of work to be performed. A bid is materially unbalanced when it is based on prices significantly less than cost for some work and prices which are significantly overstated for other work.

(g) A written award shall be furnished to the successful bidder within the period for acceptance specified in the bid and shall result in a binding contract without further action by either party.

9. Bid Guarantee (applicable to construction and equipment contracts exceeding \$25,000)

All bids must be accompanied by a negotiable bid guarantee which shall not be less than five percent (5%) of the amount of the bid. The bid guarantee may be a certified check, bank draft, U.S. Government Bonds at par value, or a bid bond secured by a surety company acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. In the case where the work under the contract will be performed on an Indian reservation area, the bid guarantee may also be an irrevocable Letter of Credit (see provision 10, Assurance of Completion, below). Certified checks and bank drafts must be made payable to the order of the PHA/IHA. The bid guarantee shall insure the execution of the contract and the furnishing of a method of assurance of completion by the successful bidder as required by the solicitation. Failure to submit a bid guarantee with the bid shall result in the rejection of the bid. Bid guarantees submitted by unsuccessful bidders will be returned as soon as practicable after bid opening.

10. Assurance of Completion

(a) Unless otherwise provided in State law, the successful bidder shall furnish an assurance of completion prior to the execution of any contract under this solicitation. This assurance may be [Contracting Officer check applicable items] —

(1) a performance and payment bond in a penal sum of 100 percent of the contract price; or, as may be required or permitted by State law;

(2) separate performance and payment bonds, each for 50 percent or more of the contract price;

(3) a 20 percent cash escrow;

(4) a 25 percent irrevocable letter of credit; or,

(5) an irrevocable letter of credit for 10 percent of the total contract price with a monitoring and disbursements agreement with the IHA (applicable only to contracts awarded by an IHA under the Indian Housing Program).

(b) Bonds must be obtained from guarantee or surety companies acceptable to the U.S. Government and authorized to do business in the state where the work is to be performed. Individual sureties will not be considered. U.S. Treasury Circular Number 570, published annually in the Federal Register, lists companies approved to act as sureties on bonds securing Government contracts, the maximum underwriting limits on each contract bonded, and the States in which the company is licensed to do business. Use of companies listed in this circular is mandatory. Copies of the circular may be downloaded on the U.S. Department of Treasury website <http://www.fms.treas.gov/c570/index.html>, or ordered for a minimum fee by contacting the Government Printing Office at (202) 512-2168.

(c) Each bond shall clearly state the rate of premium and the total amount of premium charged. The current power of attorney for the person who signs for the surety company must be attached to the bond. The effective date of the power of attorney shall not precede the date of the bond. The effective date of the bond shall be on or after the execution date of the contract.

(d) Failure by the successful bidder to obtain the required assurance of completion within the time specified, or within such extended period as the PHA/IHA may grant based upon reasons determined adequate by the PHA/IHA, shall render the bidder ineligible for award. The PHA/IHA may then either award the contract to the next lowest responsible bidder or solicit new bids. The PHA/IHA may retain the ineligible bidder's bid guarantee.

11. Preconstruction Conference (applicable to construction contracts)

After award of a contract under this solicitation and prior to the start of work, the successful bidder will be required to attend a preconstruction conference with representatives of the PHA/IHA and its architect/engineer, and other interested parties convened by the PHA/IHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract (e.g., Equal Employment Opportunity, Labor Standards). The PHA/IHA will provide the successful bidder with the date, time, and place of the conference.

12. Indian Preference Requirements (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

(a) HUD has determined that the contract awarded under this solicitation is subject to the requirements of section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e(b)). Section 7(b) requires that any contract or subcontract entered into for the benefit of Indians shall require that, to the greatest extent feasible

(1) Preferences and opportunities for training and employment (other than core crew positions; see paragraph (h) below) in connection with the administration of such contracts or subcontracts be given to qualified "Indians." The Act defines "Indians" to mean persons who are members of an Indian tribe and defines "Indian tribe" to mean any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village or regional or village corporation as defined in or established pursuant to the Alaska Native Claims Settlement Act, which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians; and,

(2) Preference in the award of contracts or subcontracts in connection with the administration of contracts be given to Indian organizations and to Indian-owned economic enterprises, as defined in section 3 of the Indian Financing Act of 1974 (25 U.S.C. 1452). That Act defines "economic enterprise" to mean any Indian-owned commercial, industrial, or business activity established or organized for the purpose of profit, except that the Indian ownership must constitute not less than 51 percent of the enterprise; "Indian organization" to mean the governing body of any Indian tribe or entity established or recognized by such governing body; "Indian" to mean any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act; and Indian "tribe" to mean any Indian tribe, band, group, pueblo, or community including Native villages and Native groups (including

corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

(b) (1) The successful Contractor under this solicitation shall comply with the requirements of this provision in awarding all subcontracts under the contract and in providing training and employment opportunities.

(2) A finding by the IHA that the contractor, either (i) awarded a subcontract without using the procedure required by the IHA, (ii) falsely represented that subcontracts would be awarded to Indian enterprises or organizations; or, (iii) failed to comply with the contractor's employment and training preference bid statement shall be grounds for termination of the contract or for the assessment of penalties or other remedies.

(c) If specified elsewhere in this solicitation, the IHA may restrict the solicitation to qualified Indian-owned enterprises and Indian organizations. If two or more (or a greater number as specified elsewhere in the solicitation) qualified Indian-owned enterprises or organizations submit responsive bids, award shall be made to the qualified enterprise or organization with the lowest responsive bid. If fewer than the minimum required number of qualified Indian-owned enterprises or organizations submit responsive bids, the IHA shall reject all bids and readvertise the solicitation in accordance with paragraph (d) below.

(d) If the IHA prefers not to restrict the solicitation as described in paragraph (c) above, or if after having restricted a solicitation an insufficient number of qualified Indian enterprises or organizations submit bids, the IHA may advertise for bids from non-Indian as well as Indian-owned enterprises and Indian organizations. Award shall be made to the qualified Indian enterprise or organization with the lowest responsive bid if that bid is -

(1) Within the maximum HUD-approved budget amount established for the specific project or activity for which bids are being solicited; and

(2) No more than the percentage specified in 24 CFR 905.175(c) higher than the total bid price of the lowest responsive bid from any qualified bidder. If no responsive bid by a qualified Indian-owned economic enterprise or organization is within the stated range of the total bid price of the lowest responsive bid from any qualified enterprise, award shall be made to the bidder with the lowest bid.

(e) Bidders seeking to qualify for preference in contracting or subcontracting shall submit proof of Indian ownership with their bids. Proof of Indian ownership shall include but not be limited to:

(1) Certification by a tribe or other evidence that the bidder is an Indian. The IHA shall accept the certification of a tribe that an individual is a member.

(2) Evidence such as stock ownership, structure, management, control, financing and salary or profit sharing arrangements of the enterprise.

(f) (1) All bidders must submit with their bids a statement describing how they will provide Indian preference in the award of subcontracts. The specific requirements of that statement and the factors to be used by the IHA in determining the statement's adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement shall be rejected as nonresponsive. The IHA may require that comparable statements be provided by subcontractors to the successful Contractor, and may require the Contractor to reject any bid or proposal by a subcontractor that fails to include the statement.

(2) Bidders and prospective subcontractors shall submit a certification (supported by credible evidence) to the IHA in any instance where the bidder or subcontractor believes it is infeasible to provide Indian preference in subcontracting. The acceptance or rejection by the IHA of the certification shall be final. Rejection shall disqualify the bid from further consideration.

(g) All bidders must submit with their bids a statement detailing their employment and training opportunities and their plans to provide preference to Indians in implementing the contract; and the number or percentage of Indians anticipated to be employed and trained. Comparable statements from all proposed subcontractors must be submitted. The criteria to be used by the IHA in determining the statement(s)'s adequacy are included as an attachment to this solicitation. Any bid that fails to include the required statement(s), or that includes a statement that does not meet minimum standards required by the IHA shall be rejected as nonresponsive.

(h) Core crew employees. A core crew employee is an individual who is a bona fide employee of the contractor at the time the bid is submitted; or an individual who was not employed by the bidder at the time the bid was submitted, but who is regularly employed by the bidder in a supervisory or other key skilled position when work is available. Bidders shall submit with their bids a list of all core crew employees.

(i) Preference in contracting, subcontracting, employment, and training shall apply not only on-site, on the reservation, or within the IHA's jurisdiction, but also to contracts with firms that operate outside these areas (e.g., employment in modular or manufactured housing construction facilities).

(j) Bidders should contact the IHA to determine if any additional local preference requirements are applicable to this solicitation.

(k) The IHA [] does [✓] does not [Contracting Officer check applicable box] maintain lists of Indian-owned economic enterprises and Indian organizations by specialty (e.g., plumbing, electrical, foundations), which are available to bidders to assist them in meeting their responsibility to provide preference in connection with the administration of contracts and subcontracts.

Spec. Sec. 00 41 00: LOUISIANA UNIFORM PUBLIC WORK BID FORM

TO:

Jefferson Parish Housing Services Development District
121 Paillet Drive, Harvey, LA 70052
Westwego, Louisiana, 70094
(Owner to provide name and address of owner)

BID FOR:

New Affordable Housing on Vacant Lots, Phase 1
Invitation To Bid (ITB) #25-002
(Owner to provide name of project and other identifying information)

The undersigned bidder hereby declares and represents that she/he: a) has carefully examined and understands the Bidding Documents, b) has not received, relied on, or based his bid on any verbal instructions contrary to the Bidding Documents or any addenda, c) has personally inspected and is familiar with the project site, and hereby proposes to provide all labor, materials, tools, appliances and facilities as required to perform, in a workmanlike manner, all work and services for the construction and completion of the referenced project, all in strict accordance with the Bidding Documents prepared by: Volume Zero, LLC and dated: July 23, 2024.
(Owner to provide name of entity preparing bidding documents.)

Bidders must acknowledge all addenda. The Bidder acknowledges receipt of the following **ADDENDA:** (Enter the number/numbers & dates that the Architect has assigned to each of the addenda that the Bidder is acknowledging)

TOTAL BASE BID: For all work required by the Bidding Documents (including any and all unit prices designated "Base Bid" * but not alternates) the sum of: _____ Dollars (\$ _____)

ALTERNATES: not used

NAME OF BIDDER: _____

ADDRESS OF BIDDER: _____

LOUISIANA CONTRACTOR'S LICENSE NUMBER: _____

NAME OF AUTHORIZED SIGNATORY OF BIDDER: _____

TITLE OF AUTHORIZED SIGNATORY OF BIDDER: _____

SIGNATURE OF AUTHORIZED SIGNATORY OF BIDDER **: _____

DATE: _____

THE FOLLOWING ITEMS ARE TO BE INCLUDED WITH THE SUBMISSION OF THIS LOUISIANA UNIFORM PUBLIC WORK BID FORM:

* The **Unit Price Form** shall be used. The number of unit prices that may be included is not limited and additional sheets may be included if needed.

** **A CORPORATE RESOLUTION OR WRITTEN EVIDENCE** of the authority of the person signing the bid for the public work as prescribed by LA R.S. 38:2212(B)(5) must be provided.

BID SECURITY in the form of a bid bond, certified check or cashier's check as prescribed by LA R.S. 38:2218(A) attached to and made a part of this bid.

Spec. Sec. 00 41 00 (continued): LOUISIANA UNIFORM PUBLIC WORK BID FORM
UNIT PRICE FORM

This Unit Price form consists of four (4) pages and twenty-six (26) Unit Prices.

TO: Jefferson Parish Housing Services Development District
121 Paillet Drive, Harvey, LA 70052

BID FOR: New Affordable Housing on Vacant Lots, Phase 1
Invitation To Bid (ITB) #25-002

(Owner to provide name and address of owner)

(Owner to provide name of project and other identifying information)

UNIT PRICES: This form shall be used for any and all work required by the Bidding Documents and described as unit prices. Amounts shall be stated in figures and only in figures. Provide all work indicated for 6204 Sixth Avenue.

DESCRIPTION:	Provide all work indicated for 6204 Sixth Avenue.	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
1	1	All work at one site	

DESCRIPTION:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
2			

DESCRIPTION:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
3			

DESCRIPTION:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
4			

DESCRIPTION:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)

DESCRIPTION:		UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
REF. NO.	QUANTITY:	UNIT PRICE	UNIT PRICE EXTENSION (Quantity times Unit Price)
6			

Wording for "DESCRIPTION" is to be provided by the Owner.

The contractor will be paid based upon actual quantities approved by the Owner and provided by the Contractor.

SECTION 00 43 01 – NON-COLLUSION AFFIDAVIT

Bidder entity name: _____

State of _____

Parish of _____

_____ Being duly sworn, deposes and says:
(Bidder representative name)

That he/she is _____
(a Partner, Officer, or Member of the firm of, etc.)

The party making the foregoing proposal or bid, that such proposal or bid is genuine and not collusive or sham; that said bidder has not colluded, conspired, connived or agreed, directly or indirectly with any bidder or person, to put in a sham bid or to refrain from bidding, and has not in any manner, directly or indirectly, sought by agreement or collusion, or communication or conference, with any person to fix the bid price or affiant any other bidder, or to fix any overhead profit or cost element of said bid price, or that any other bidder, or to secure any advantage against the Owner, Jefferson Parish Housing Services Development District (JPHSDD), or any personal interest in the proposed contracts; and that all statements in said proposal or bid are true.

Signature of _____
Respondent, if the Bidder is an individual

Partner, if the Bidder is a partnership

Officer, if the Bidder is a corporation

SWORN TO AND SUBSCRIBED

BEFORE ME THIS _____ DAY OF _____, 2025

Notary Public signature

Notary Public printed name

My commission expires _____.

**JEFFERSON PARISH HOUSING SERVICES DEVELOPMENT DISTRICT (JPHSDD)
INVITATION TO BID (ITB) #25-002
NEW AFFORDABLE HOUSING ON VACANT LOTS, PHASE 1**

CERTIFICATION OF CONTRACTOR NON-EXCLUSION

This certification applies to a sole proprietor of any bidding entity or any individual partner, incorporator, director, manager, officer, organizer, or member, who has at least 10% ownership in the bidding entity, for consideration for awards of contracts, in accordance with LA R.S. 38:2227.

A conviction of or plea of guilty or no contest to the following state crimes or equivalent federal crimes shall permanently bar any person or the bidding entity from bidding on public projects:

- (a) Public bribery
- (b) Corrupt influencing
- (c) Extortion
- (d) Money laundering

A conviction of or plea of guilty or no contest to the following state crimes or equivalent federal crimes shall bar any person or the bidding entity from bidding on public projects for a period of five years from the date of conviction or from the date of the entrance of the plea of guilty or no contest:

- (a) Theft
- (b) Identity theft
- (c) Theft of a business record
- (d) False accounting
- (e) Issuing worthless checks
- (f) Bank fraud
- (g) Forgery
- (h) Contractors; misapplication of payments
- (i) Malfeasance in office

The five-year prohibition shall apply only if the crime was committed during the solicitation or execution of a contract or bid awarded pursuant to the provisions of LA R.S. Title 38, Chapter 10 -- Public Contracts.

Should information be discovered about a bidding entity that would be cause for debarment, suspension exclusion, or determination of ineligibility for award of a contract, the WHA shall report and submit supporting documentation to the applicable regulatory agency.

I hereby attest that I have not been convicted of, or have not entered a plea of guilty or solo contendere to any of the crimes listed above or equivalent crimes.

(Printed name)

(Date)

(Signature)

Name of bidding entity: _____

Specification Section 00 43 13, SAMPLE FORM OF BID BOND

BID BOND

KNOW ALL MEN BY THESE PRESENTS:

That we, _____ as Principal, hereinafter called the Principal, and _____ a corporation duly organized under the laws of the State of Louisiana, as Surety, are held and firmly bound unto the Housing Authority of the City of Westwego (WHA), for the sum of

Dollars (\$ _____), for the payment of which sum well and truly to be made, the said Principal and the said Surety bind ourselves, our heirs, executors, administrators, successors, and assigns, jointly and severally, firmly be these presents.

WHEREAS, the Principal has submitted a bid for Jefferson Parish Housing Services Development District (JPHSDD) Invitation to Bid (ITB) #25-002: New Affordable Housing on Vacant Lots, Phase 1.

Located at Seven Lots in Marrero, Louisiana as identified in the Bidding Documents. The project consists of new houses and other improvements to the seven Lots.

(Identify project by name and brief description)

NOW THEREFORE, if the JPHSDD shall accept the bid of the Principal and the Principal shall enter into a contract with the JPHSDD in accordance with the terms of such bid, and give such bond or bonds as may be specified in the bidding or Contract Documents with good and sufficient surety for the faithful performance of such contract and for the prompt payment of labor and material furnished in the prosecution thereof, or in the event of the failure of the Principal to enter such Contract and give such bond or bonds, if the Principal shall pay to the WHA the difference not to exceed the penalty hereof between the amount specified in said bid and such larger amount for which the WHA may in good faith contract with another party to perform work covered by said bid or an appropriate required amount as specified in the Invitation for Bids, the foregoing to include any other purposes or items set out in, and to be subject to, provisions of La. R.S. 38:2241; 38:2216, as amended, then this obligation shall be null and void; otherwise to remain in full force and effect.

IN WITNESS WHEREOF, the Principal and Surety have hereto set their hands and seals, this

_____ day of _____, 20_____.

PRINCIPAL

SURETY

(Name and Seal)

(Attorney-in-Fact)

ATTEST: _____ **ATTEST:** _____

Under penalties of perjury, as prescribed in 18 U.S.C. 1001, the undersigned certifies that the statements set forth in this bid are true and correct.

Specification Section 00 45 00

**U.S. Department of Housing
and Urban Development**

Office of Public and Indian Housing

**Representations, Certifications,
and Other Statements of Bidders
Public and Indian Housing Programs**

Representations, Certifications, and Other Statements of Bidders

Public and Indian Housing Programs

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1. Certificate of Independent Price Determination

(a) The bidder certifies that--

(1) The prices in this bid have been arrived at independently, without, for the purpose of restricting competition, any consultation, communication, or agreement with any other bidder or competitor relating to (i) those prices, (ii) the intention to submit a bid, or (iii) the methods or factors used to calculate the prices offered;

(2) The prices in this bid have not been and will not be knowingly disclosed by the bidder, directly or indirectly, to any other bidder or competitor before bid opening (in the case of a sealed bid solicitation) or contract award (in the case of a competitive proposal solicitation) unless otherwise required by law; and

(3) No attempt has been made or will be made by the bidder to induce any other concern to submit or not to submit a bid for the purpose of restricting competition.

(b) Each signature on the bid is considered to be a certification by the signatory that the signatory--

(1) Is the person in the bidder's organization responsible for determining the prices being offered in this bid or proposal, and that the signatory has not participated and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above; or

(2) (i) Has been authorized, in writing, to act as agent for the following principals in certifying that those principals have not participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

_____ [insert full name of person(s) in the bidder's organization responsible for determining the prices offered in this bid or proposal, and the title of his or her position in the bidder's organization];

(ii) As an authorized agent, does certify that the principals named in subdivision (b)(2)(i) above have not participated, and will not participate, in any action contrary to subparagraphs (a)(1) through (a)(3) above; and

(iii) As an agent, has not personally participated, and will not participate in any action contrary to subparagraphs (a)(1) through (a)(3) above.

(c) If the bidder deletes or modifies subparagraph (a)2 above, the bidder must furnish with its bid a signed statement setting forth in detail the circumstances of the disclosure.

[] [Contracting Officer check if following paragraph is applicable]

(d) Non-collusive affidavit. (applicable to contracts for construction and equipment exceeding \$50,000)

(1) Each bidder shall execute, in the form provided by the PHA/IHA, an affidavit to the effect that he/she has not colluded with any other person, firm or corporation in regard to any bid submitted in response to this solicitation. If the successful bidder did not submit the affidavit with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the affidavit by that date may render the bid nonresponsive. No contract award will be made without a properly executed affidavit.

(2) A fully executed "Non-collusive Affidavit" [] is, [] is not included with the bid.

2. Contingent Fee Representation and Agreement

(a) Definitions. As used in this provision:

"Bona fide employee" means a person, employed by a bidder and subject to the bidder's supervision and control as to time, place, and manner of performance, who neither exerts, nor proposes to exert improper influence to solicit or obtain contracts nor holds out as being able to obtain any contract(s) through improper influence.

"Improper influence" means any influence that induces or tends to induce a PHA/IHA employee or officer to give consideration or to act regarding a PHA/IHA contract on any basis other than the merits of the matter.

(b) The bidder represents and certifies as part of its bid that, except for full-time bona fide employees working solely for the bidder, the bidder:

(1) [] has, [] has not employed or retained any person or company to solicit or obtain this contract; and

(2) [] has, [] has not paid or agreed to pay to any person or company employed or retained to solicit or obtain this contract any commission, percentage, brokerage, or other fee contingent upon or resulting from the award of this contract.

(c) If the answer to either (a)(1) or (a)(2) above is affirmative, the bidder shall make an immediate and full written disclosure to the PHA/IHA Contracting Officer.

(d) Any misrepresentation by the bidder shall give the PHA/IHA the right to (1) terminate the contract; (2) at its discretion, deduct from contract payments the amount of any commission, percentage, brokerage, or other contingent fee; or (3) take other remedy pursuant to the contract.

3. Certification and Disclosure Regarding Payments to Influence Certain Federal Transactions (applicable to contracts exceeding \$100,000)

(a) The definitions and prohibitions contained in Section 1352 of title 31, United States Code, are hereby incorporated by reference in paragraph (b) of this certification.

(b) The bidder, by signing its bid, hereby certifies to the best of his or her knowledge and belief as of December 23, 1989 that:

(1) No Federal appropriated funds have been paid or will be paid to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with the awarding of a contract resulting from this solicitation;

(2) If any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress on his or her behalf in connection with this solicitation, the bidder shall complete and submit, with its bid, OMB standard form LLL, "Disclosure of Lobbying Activities;" and

(3) He or she will include the language of this certification in all subcontracts at any tier and require that all recipients of subcontract awards in excess of \$100,000 shall certify and disclose accordingly.

(c) Submission of this certification and disclosure is a prerequisite for making or entering into this contract imposed by section 1352, title 31, United States Code. Any person who makes an expenditure prohibited under this provision or who fails to file or amend the disclosure form to be filed or amended by this provision, shall be subject to a civil penalty of not less than \$10,000, and not more than \$100,000, for each such failure.

(d) Indian tribes (except those chartered by States) and Indian organizations as defined in section 4 of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450B) are exempt from the requirements of this provision.

4. Organizational Conflicts of Interest Certification

The bidder certifies that to the best of its knowledge and belief and except as otherwise disclosed, he or she does not have any organizational conflict of interest which is defined as a situation in which the nature of work to be performed under this proposed contract and the bidder's organizational, financial, contractual, or other interests may, without some restriction on future activities:

- (a) Result in an unfair competitive advantage to the bidder; or,
- (b) Impair the bidder's objectivity in performing the contract work.

[] In the absence of any actual or apparent conflict, I hereby certify that to the best of my knowledge and belief, no actual or apparent conflict of interest exists with regard to my possible performance of this procurement.

5. Bidder's Certification of Eligibility

(a) By the submission of this bid, the bidder certifies that to the best of its knowledge and belief, neither it, nor any person or firm which has an interest in the bidder's firm, nor any of the bidder's subcontractors, is ineligible to:

(1) Be awarded contracts by any agency of the United States Government, HUD, or the State in which this contract is to be performed; or,

(2) Participate in HUD programs pursuant to 24 CFR Part 24.

(b) The certification in paragraph (a) above is a material representation of fact upon which reliance was placed when making award. If it is later determined that the bidder knowingly rendered an erroneous certification, the contract may be terminated for default, and the bidder may be debarred or suspended from participation in HUD programs and other Federal contract programs.

6. Minimum Bid Acceptance Period

(a) "Acceptance period," as used in this provision, means the number of calendar days available to the PHA/IHA for awarding a contract from the date specified in this solicitation for receipt of bids.

(b) This provision supersedes any language pertaining to the acceptance period that may appear elsewhere in this solicitation.

(c) The PHA/IHA requires a minimum acceptance period of [Contracting Officer insert time period] calendar days.

(d) In the space provided immediately below, bidders may specify a longer acceptance period than the PHA's/IHA's minimum requirement. The bidder allows the following acceptance period: calendar days.

(e) A bid allowing less than the PHA's/IHA's minimum acceptance period will be rejected.

(f) The bidder agrees to execute all that it has undertaken to do, in compliance with its bid, if that bid is accepted in writing within (1) the acceptance period stated in paragraph (c) above or (2) any longer acceptance period stated in paragraph (d) above.

7. Small, Minority, Women-Owned Business Concern Representation

The bidder represents and certifies as part of its bid/ offer that it --

(a) [] is, [] is not a small business concern. "Small business concern," as used in this provision, means a concern, including its affiliates, that is independently owned and operated, not dominant in the field of operation in which it is bidding, and qualified as a small business under the criteria and size standards in 13 CFR 121.

(b) [] is, [] is not a women-owned business enterprise. "Women-owned business enterprise," as used in this provision, means a business that is at least 51 percent owned by a woman or women who are U.S. citizens and who also control and operate the business.

(c) [] is, [] is not a minority business enterprise. "Minority business enterprise," as used in this provision, means a business which is at least 51 percent owned or controlled by one or more minority group members or, in the case of a publicly owned business, at least 51 percent of its voting stock is owned by one or more minority group members, and whose management and daily operations are controlled by one or more such individuals. For the purpose of this definition, minority group members are:

(Check the block applicable to you)

- | | |
|------------------------|------------------------------|
| [] Black Americans | [] Asian Pacific Americans |
| [] Hispanic Americans | [] Asian Indian Americans |
| [] Native Americans | [] Hasidic Jewish Americans |

8. Indian-Owned Economic Enterprise and Indian Organization Representation (applicable only if this solicitation is for a contract to be performed on a project for an Indian Housing Authority)

The bidder represents and certifies that it:

(a) [] is, [] is not an Indian-owned economic enterprise. "Economic enterprise," as used in this provision, means any commercial, industrial, or business activity established or organized for the purpose of profit, which is at least 51 percent Indian owned. "Indian," as used in this provision, means any person who is a member of any tribe, band, group, pueblo, or community which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs and any "Native" as defined in the Alaska Native Claims Settlement Act.

(b) [] is, [] is not an Indian organization. "Indian organization," as used in this provision, means the governing body of any Indian tribe or entity established or recognized by such governing body. Indian "tribe" means any Indian tribe, band, group, pueblo, or

community including Native villages and Native groups (including corporations organized by Kenai, Juneau, Sitka, and Kodiak) as defined in the Alaska Native Claims Settlement Act, which is recognized by the Federal Government as eligible for services from the Bureau of Indian Affairs.

9. Certification of Eligibility Under the Davis-Bacon Act (applicable to construction contracts exceeding \$2,000)

(a) By the submission of this bid, the bidder certifies that neither it nor any person or firm who has an interest in the bidder's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(b) No part of the contract resulting from this solicitation shall be subcontracted to any person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

(c) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.

10. Certification of Nonsegregated Facilities (applicable to contracts exceeding \$10,000)

(a) The bidder's attention is called to the clause entitled **Equal Employment Opportunity** of the General Conditions of the Contract for Construction.

(b) "Segregated facilities," as used in this provision, means any waiting rooms, work areas, rest rooms and wash rooms, restaurants and other eating areas, time clocks, locker rooms and other storage or dressing areas, parking lots, drinking fountains, recreation or entertainment areas, transportation, and housing facilities provided for employees, that are segregated by explicit directive or are in fact segregated on the basis of race, color, religion, or national origin because of habit, local custom, or otherwise.

(c) By the submission of this bid, the bidder certifies that it does not and will not maintain or provide for its employees any segregated facilities at any of its establishments, and that it does not and will not permit its employees to perform their services at any location under its control where segregated facilities are maintained. The bidder agrees that a breach of this certification is a violation of the Equal Employment Opportunity clause in the contract.

(d) The bidder further agrees that (except where it has obtained identical certifications from proposed subcontractors for specific time periods) prior to entering into subcontracts which exceed \$10,000 and are not exempt from the requirements of the Equal Employment Opportunity clause, it will:

- (1) Obtain identical certifications from the proposed subcontractors;
- (2) Retain the certifications in its files; and
- (3) Forward the following notice to the proposed subcontractors (except if the proposed subcontractors have submitted identical certifications for specific time periods):

Notice to Prospective Subcontractors of Requirement for Certifications of Nonsegregated Facilities

A Certification of Nonsegregated Facilities must be submitted before the award of a subcontract exceeding \$10,000 which is not exempt from the provisions of the Equal Employment Opportunity clause of the prime contract. The certification may be submitted either for each subcontract or for all subcontracts during a period (i.e., quarterly, semiannually, or annually).

Note: The penalty for making false statements in bids is prescribed in 18 U.S.C. 1001.

11. Clean Air and Water Certification (applicable to contracts exceeding \$100,000)

The bidder certifies that:

(a) Any facility to be used in the performance of this contract [] is, [] is not listed on the Environmental Protection Agency List of Violating Facilities:

(b) The bidder will immediately notify the PHA/IHA Contracting Officer, before award, of the receipt of any communication from the Administrator, or a designee, of the Environmental Protection Agency, indicating that any facility that the bidder proposes to use for the performance of the contract is under consideration to be listed on the EPA List of Violating Facilities; and,

(c) The bidder will include a certification substantially the same as this certification, including this paragraph (c), in every nonexempt subcontract.

12. Previous Participation Certificate (applicable to construction and equipment contracts exceeding \$50,000)

(a) The bidder shall complete and submit with his/her bid the Form HUD-2530, "Previous Participation Certificate." If the successful bidder does not submit the certificate with his/her bid, he/she must submit it within three (3) working days of bid opening. Failure to submit the certificate by that date may render the bid nonresponsive. No contract award will be made without a properly executed certificate.

(b) A fully executed "Previous Participation Certificate" [] is, [] is not included with the bid.

13. Bidder's Signature

The bidder hereby certifies that the information contained in these certifications and representations is accurate, complete, and current.

(Signature and Date)

(Typed or Printed Name)

(Title)

(Company Name)

(Company Address)

Specification Section 00 50 00, Sample Form of Agreement
AGREEMENT BETWEEN
JEFFERSON PARISH HOUSING SERVICES DEVELOPMENT DISTRICT (JPHSDD) AND

THIS AGREEMENT , made this ____ day of _____, in the year of Two Thousand Twenty-Five by and between “**Jefferson Parish Housing Services Development District**”, a public body, corporate and politic, created pursuant to the Housing Authority’s Laws of the State of Louisiana, (hereinafter called the “**Owner**”) and “_____” (hereinafter called the “**Contractor**”).

WITNESSETH: That the Contractor and the Owner, for the consideration stated herein, mutually agree as follows:

ARTICLE 1. STATEMENT OF WORK. The Contractor shall furnish all supervision, labor, equipment, and services, and perform and complete all work required, all in strict accordance with the Contract Documents for the Project:

**Jefferson Parish Housing Services Development District ITB #25-002:
New Affordable Housing on Vacant Lots, Phase 1**

including Addenda thereto, numbered and dated as:

ADDENDUM NUMBER _____, dated _____

ADDENDUM NUMBER _____, dated _____

ADDENDUM NUMBER _____, dated _____

with said Specifications, Addenda, Drawings, and all other Contract Documents incorporated herein by reference, and made a part hereof.

ARTICLE 2. TIME OF COMPLETION. The contractor shall commence work under this Contract at the time stipulated in the written “Notice to Proceed” (NTP) issued by the Architect. The Contractor shall complete all Base Bid work under the Contract within two hundred seventy (270) consecutive calendar days, beginning on and including the date of “Notice to Proceed”. The work shall be considered complete only when the Owner has issued its formal “Certificate of Acceptance” of the work.

ARTICLE 3. LIQUIDATED DAMAGES. The Liquidated Damages for delay in completion pursuant to the Conditions of the Contract, shall be two hundred dollars (\$200) per calendar day of delay until the work is completed and accepted by the Owner.

ARTICLE 4. THE CONTRACT PRICE. The Contractor shall complete all Base Bid work for a lump sum firm fixed price of _____ Dollars(\$ _____), in strict accordance with the drawings, specifications, and addenda.

The Contractor shall complete all work under the unit prices (to the extent that such work is awarded to the Contractor by the Owner) for prices as indicated on the Unit Prices page of the Contractor’s Bid Form

ARTICLE 5. CONTRACT DOCUMENTS. The Contract shall consist of the following component parts and any other published Bidding Documents:

- A. This Agreement and Performance and Payment Bond
- B. General Conditions
- C. Supplemental Conditions
- D. Technical Specifications
- E. Addenda
- F. Drawings
- G. Bid Submittals

This Agreement, together with the other documents enumerated in Article 5, with said other documents are fully a part of the Contract as if hereto attached or herein repeated, form the Contract. In the event that any provision in any component part of the Contract conflicts with any provision of any other component part, the provision of any other component part first enumerated in Article 5 shall govern except as otherwise specifically stated. The various provisions in Addenda shall be construed in the order of preference of the component part of the Contract which each modifies.

IN WITNESS WHEREOF, the parties hereto have caused The Agreement to be executed in quintuplicate original counterparts as of the day and year written.

ATTEST:

CONTRACTOR NAME: _____

By: _____
(signature)

(printed name)

Title: _____

Date: _____

BUSINESS ADDRESS:

ATTEST:

Jefferson Parish Housing Services Development District

By: _____
Dorian Rawles

Title: Executive Director

Date: _____

Business Address: 121 Paillet Drive, Harvey, LA 70052

General Conditions for Construction Contracts - Public Housing Programs

U.S. Department of Housing and Urban Development
 Office of Public and Indian Housing
 OMB Approval No. 2577-0157 (exp. 11/30/2023)

Applicability. This form is applicable to any construction/development contract greater than \$150,000.

Public reporting burden for this collection of information is estimated to average 1 hour. This includes the time for collecting, reviewing, and reporting the data. The information requested is required to obtain a benefit. This form includes those clauses required by OMB's common rule on grantee procurement, implemented at HUD in 2 CFR 200, and those requirements set forth in Section 3 of the Housing and Urban Development Act of 1968 and its amendment by the Housing and Community Development Act of 1992, implemented by HUD at 24 CFR Part 135. The form is required for construction contracts awarded by Public Housing Agencies (PHAs). The form is used by Housing Authorities in solicitations to provide necessary contract clauses. If the form were not used, PHAs would be unable to enforce their contracts.. There are no assurances of confidentiality. HUD may not conduct or sponsor, and an applicant is not required to respond to a collection of information unless it displays a currently valid OMB control number.

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1. Definitions

- (a) "Architect" means the person or other entity engaged by the PHA to perform architectural, engineering, design, and other services related to the work as provided for in the contract. When a PHA uses an engineer to act in this capacity, the terms "architect" and "engineer" shall be synonymous. The Architect shall serve as a technical representative of the Contracting Officer. The Architect's authority is as set forth elsewhere in this contract.
 - (b) "Contract" means the contract entered into between the PHA and the Contractor. It includes the forms of Bid, the Bid Bond, the Performance and Payment Bond or Bonds or other assurance of completion, the Certifications, Representations, and Other Statements of Bidders (form HUD-5370), these General Conditions of the Contract for Construction (form HUD-5370), the applicable wage rate determinations from the U.S. Department of Labor, any special conditions included elsewhere in the contract, the specifications, and drawings. It includes all formal changes to any of those documents by addendum, change order, or other modification.
 - (c) "Contracting Officer" means the person delegated the authority by the PHA to enter into, administer, and/or terminate this contract and designated as such in writing to the Contractor. The term includes any successor Contracting Officer and any duly authorized representative of the Contracting Officer also designated in writing. The Contracting Officer shall be deemed the authorized agent of the PHA in all dealings with the Contractor.
 - (d) "Contractor" means the person or other entity entering into the contract with the PHA to perform all of the work required under the contract.
 - (e) "Drawings" means the drawings enumerated in the schedule of drawings contained in the Specifications and as described in the contract clause entitled Specifications and Drawings for Construction herein.
 - (f) "HUD" means the United States of America acting through the Department of Housing and Urban Development including the Secretary, or any other person designated to act on its behalf. HUD has agreed, subject to the provisions of an Annual Contributions Terms and Conditions (ACC), to provide financial assistance to the PHA, which includes assistance in financing the work to be performed under this contract. As defined elsewhere in these General Conditions or the contract documents, the determination of HUD may be required to authorize changes in the work or for release of funds to the PHA for payment to the Contractor. Notwithstanding HUD's role, nothing in this contract shall be construed to create any contractual relationship between the Contractor and HUD.
 - (g) "Project" means the entire project, whether construction or rehabilitation, the work for which is provided for in whole or in part under this contract.
 - (h) "PHA" means the Public Housing Agency organized under applicable state laws which is a party to this contract.
 - (i) "Specifications" means the written description of the technical requirements for construction and includes the criteria and tests for determining whether the requirements are met.
 - (l) "Work" means materials, workmanship, and manufacture and fabrication of components.
- (a) The Contractor shall furnish all necessary labor, materials, tools, equipment, and transportation necessary for performance of the work. The Contractor shall also furnish all necessary water, heat, light, and power not made available to the Contractor by the PHA pursuant to the clause entitled Availability and Use of Utility Services herein.
 - (b) The Contractor shall perform on the site, and with its own organization, work equivalent to at least [] (12 percent unless otherwise indicated) of the total amount of work to be performed under the order. This percentage may be reduced by a supplemental agreement to this order if, during performing the work, the Contractor requests a reduction and the Contracting Officer determines that the reduction would be to the advantage of the PHA.
 - (c) At all times during performance of this contract and until the work is completed and accepted, the Contractor shall directly superintend the work or assign and have on the work site a competent superintendent who is satisfactory to the Contracting Officer and has authority to act for the Contractor.
 - (d) The Contractor shall be responsible for all damages to persons or property that occur as a result of the Contractor's fault or negligence, and shall take proper safety and health precautions to protect the work, the workers, the public, and the property of others. The Contractor shall hold and save the PHA, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance. The Contractor shall also be responsible for all materials delivered and work performed until completion and acceptance of the entire work, except for any completed unit of work which may have been accepted under the contract.
 - (e) The Contractor shall lay out the work from base lines and bench marks indicated on the drawings and be responsible for all lines, levels, and measurements of all work executed under the contract. The Contractor shall verify the figures before laying out the work and will be held responsible for any error resulting from its failure to do so.
 - (f) The Contractor shall confine all operations (including storage of materials) on PHA premises to areas authorized or approved by the Contracting Officer.
 - (g) The Contractor shall at all times keep the work area, including storage areas, free from accumulations of waste materials. After completing the work and before final inspection, the Contractor shall (1) remove from the premises all scaffolding, equipment, tools, and materials (including rejected materials) that are not the property of the PHA and all rubbish caused by its work; (2) leave the work area in a clean, neat, and orderly condition satisfactory to the Contracting Officer; (3) perform all specified tests; and, (4) deliver the installation in complete and operating condition.
 - (h) The Contractor's responsibility will terminate when all work has been completed, the final inspection made, and the work accepted by the Contracting Officer. The Contractor will then be released from further obligation except as required by the warranties specified elsewhere in the contract.

3. Architect's Duties, Responsibilities, and Authority

- (a) The Architect for this contract, and any successor, shall be designated in writing by the Contracting Officer.

2. Contractor's Responsibility for Work

- (b) The Architect shall serve as the Contracting Officer's technical representative with respect to architectural, engineering, and design matters related to the work performed under the contract. The Architect may provide direction on contract performance. Such direction shall be within the scope of the contract and may not be of a nature which: (1) institutes additional work outside the scope of the contract; (2) constitutes a change as defined in the Changes clause herein; (3) causes an increase or decrease in the cost of the contract; (4) alters the Construction Progress Schedule; or (5) changes any of the other express terms or conditions of the contract.
- (c) The Architect's duties and responsibilities may include but shall not be limited to:
- (1) Making periodic visits to the work site, and on the basis of his/her on-site inspections, issuing written reports to the PHA which shall include all observed deficiencies. The Architect shall file a copy of the report with the Contractor's designated representative at the site;
 - (2) Making modifications in drawings and technical specifications and assisting the Contracting Officer in the preparation of change orders and other contract modifications for issuance by the Contracting Officer;
 - (3) Reviewing and making recommendations with respect to - (i) the Contractor's construction progress schedules; (ii) the Contractor's shop and detailed drawings; (iii) the machinery, mechanical and other equipment and materials or other articles proposed for use by the Contractor; and, (iv) the Contractor's price breakdown and progress payment estimates; and,
 - (4) Assisting in inspections, signing Certificates of Completion, and making recommendations with respect to acceptance of work completed under the contract.

4. Other Contracts

The PHA may undertake or award other contracts for additional work at or near the site of the work under this contract. The Contractor shall fully cooperate with the other contractors and with PHA employees and shall carefully adapt scheduling and performing the work under this contract to accommodate the additional work, heeding any direction that may be provided by the Contracting Officer. The Contractor shall not commit or permit any act that will interfere with the performance of work by any other contractor or by PHA employees

Construction Requirements

5. Pre-construction Conference and Notice to Proceed

- (a) Within ten calendar days of contract execution, and prior to the commencement of work, the Contractor shall attend a preconstruction conference with representatives of the PHA, its Architect, and other interested parties convened by the PHA. The conference will serve to acquaint the participants with the general plan of the construction operation and all other requirements of the contract. The PHA will provide the Contractor with the date, time, and place of the conference.
- (b) The contractor shall begin work upon receipt of a written Notice to Proceed from the Contracting Officer or designee. The Contractor shall not begin work prior to receiving such notice.

6. Construction Progress Schedule

- (a) The Contractor shall, within five days after the work commences on the contract or another period of time determined by the Contracting Officer, prepare and submit to the Contracting Officer for approval three copies of a practicable schedule showing the order in which the Contractor proposes to perform the work, and the dates on which the Contractor contemplates starting and completing the several salient features of the work (including acquiring labor, materials, and equipment). The schedule shall be in the form of a progress chart of suitable scale to indicate appropriately the percentage of work scheduled for completion by any given date during the period. If the Contractor fails to submit a schedule within the time prescribed, the Contracting Officer may withhold approval of progress payments or take other remedies under the contract until the Contractor submits the required schedule.
- (b) The Contractor shall enter the actual progress on the chart as required by the Contracting Officer, and immediately deliver three copies of the annotated schedule to the Contracting Officer. If the Contracting Officer determines, upon the basis of inspection conducted pursuant to the clause entitled Inspection and Acceptance of Construction, herein that the Contractor is not meeting the approved schedule, the Contractor shall take steps necessary to improve its progress, including those that may be required by the Contracting Officer, without additional cost to the PHA. In this circumstance, the Contracting Officer may require the Contractor to increase the number of shifts, overtime operations, days of work, and/or the amount of construction plant, and to submit for approval any supplementary schedule or schedules in chart form as the Contracting Officer deems necessary to demonstrate how the approved rate of progress will be regained.
- (c) Failure of the Contractor to comply with the requirements of the Contracting Officer under this clause shall be grounds for a determination by the Contracting Officer that the Contractor is not prosecuting the work with sufficient diligence to ensure completion within the time specified in the Contract. Upon making this determination, the Contracting Officer may terminate the Contractor's right to proceed with the work, or any separable part of it, in accordance with the Default clause of this contract.

7. Site Investigation and Conditions Affecting the Work

- (a) The Contractor acknowledges that it has taken steps reasonably necessary to ascertain the nature and location of the work, and that it has investigated and satisfied itself as to the general and local conditions which can affect the work or its cost, including but not limited to, (1) conditions bearing upon transportation, disposal, handling, and storage of materials; (2) the availability of labor, water, electric power, and roads; (3) uncertainties of weather, river stages, tides, or similar physical conditions at the site; (4) the conformation and conditions of the ground; and (5) the character of equipment and facilities needed preliminary to and during work performance. The Contractor also acknowledges that it has satisfied itself as to the character, quality, and quantity of surface and subsurface materials or obstacles to be encountered insofar as this information is

reasonably ascertainable from an inspection of the site, including all exploratory work done by the PHA, as well as from the drawings and specifications made a part of this contract. Any failure of the Contractor to take the actions described and acknowledged in this paragraph will not relieve the Contractor from responsibility for estimating properly the difficulty and cost of successfully performing the work, or for proceeding to successfully perform the work without additional expense to the PHA.

- (b) The PHA assumes no responsibility for any conclusions or interpretations made by the Contractor based on the information made available by the PHA. Nor does the PHA assume responsibility for any understanding reached or representation made concerning conditions which can affect the work by any of its officers or agents before the execution of this contract, unless that understanding or representation is expressly stated in this contract.

8. Differing Site Conditions

- (a) The Contractor shall promptly, and before the conditions are disturbed, give a written notice to the Contracting Officer of (1) subsurface or latent physical conditions at the site which differ materially from those indicated in this contract, or (2) unknown physical conditions at the site(s), of an unusual nature, which differ materially from those ordinarily encountered and generally recognized as inhering in work of the character provided for in the contract.
- (b) The Contracting Officer shall investigate the site conditions promptly after receiving the notice. Work shall not proceed at the affected site, except at the Contractor's risk, until the Contracting Officer has provided written instructions to the Contractor. If the conditions do materially so differ and cause an increase or decrease in the Contractor's cost of, or the time required for, performing any part of the work under this contract, whether or not changed as a result of the conditions, the Contractor shall file a claim in writing to the PHA within ten days after receipt of such instructions and, in any event, before proceeding with the work. An equitable adjustment in the contract price, the delivery schedule, or both shall be made under this clause and the contract modified in writing accordingly.
- (c) No request by the Contractor for an equitable adjustment to the contract under this clause shall be allowed, unless the Contractor has given the written notice required; provided, that the time prescribed in (a) above for giving written notice may be extended by the Contracting Officer.
- (d) No request by the Contractor for an equitable adjustment to the contract for differing site conditions shall be allowed if made after final payment under this contract.

9. Specifications and Drawings for Construction

- (a) The Contractor shall keep on the work site a copy of the drawings and specifications and shall at all times give the Contracting Officer access thereto. Anything mentioned in the specifications and not shown on the drawings, or shown on the drawings and not mentioned in the specifications, shall be of like effect as if shown or mentioned in both. In case of difference between drawings and specifications, the specifications shall govern. In case of discrepancy in the figures, in the drawings, or in the specifications, the matter shall be

promptly submitted to the Contracting Officer, who shall promptly make a determination in writing. Any adjustment by the Contractor without such a determination shall be at its own risk and expense. The Contracting Officer shall furnish from time to time such detailed drawings and other information as considered necessary, unless otherwise provided.

- (b) Wherever in the specifications or upon the drawings the words "directed", "required", "ordered", "designated", "prescribed", or words of like import are used, it shall be understood that the "direction", "requirement", "order", "designation", or "prescription", of the Contracting Officer is intended and similarly the words "approved", "acceptable", "satisfactory", or words of like import shall mean "approved by", or "acceptable to", or "satisfactory to" the Contracting Officer, unless otherwise expressly stated.
- (c) Where "as shown" "as indicated", "as detailed", or words of similar import are used, it shall be understood that the reference is made to the drawings accompanying this contract unless stated otherwise. The word "provided" as used herein shall be understood to mean "provide complete in place" that is "furnished and installed".
- (d) "Shop drawings" means drawings, submitted to the PHA by the Contractor, subcontractor, or any lower tier subcontractor, showing in detail (1) the proposed fabrication and assembly of structural elements and (2) the installation (i.e., form, fit, and attachment details) of materials of equipment. It includes drawings, diagrams, layouts, schematics, descriptive literature, illustrations, schedules, performance and test data, and similar materials furnished by the Contractor to explain in detail specific portions of the work required by the contract. The PHA may duplicate, use, and disclose in any manner and for any purpose shop drawings delivered under this contract.
- (e) If this contract requires shop drawings, the Contractor shall coordinate all such drawings, and review them for accuracy, completeness, and compliance with other contract requirements and shall indicate its approval thereon as evidence of such coordination and review. Shop drawings submitted to the Contracting Officer without evidence of the Contractor's approval may be returned for resubmission. The Contracting Officer will indicate an approval or disapproval of the shop drawings and if not approved as submitted shall indicate the PHA's reasons therefore. Any work done before such approval shall be at the Contractor's risk. Approval by the Contracting Officer shall not relieve the Contractor from responsibility for any errors or omissions in such drawings, nor from responsibility for complying with the requirements of this contract, except with respect to variations described and approved in accordance with (f) below.
- (f) If shop drawings show variations from the contract requirements, the Contractor shall describe such variations in writing, separate from the drawings, at the time of submission. If the Architect approves any such variation and the Contracting Officer concurs, the Contracting Officer shall issue an appropriate modification to the contract, except that, if the variation is minor or does not involve a change in price or in time of performance, a modification need not be issued.
- (g) It shall be the responsibility of the Contractor to make timely requests of the PHA for such large scale and full size drawings, color schemes, and other additional information, not already in his possession, which shall be

required in the planning and production of the work. Such requests may be submitted as the need arises, but each such request shall be filed in ample time to permit appropriate action to be taken by all parties involved so as to avoid delay.

- (h) The Contractor shall submit to the Contracting Officer for approval four copies (unless otherwise indicated) of all shop drawings as called for under the various headings of these specifications. Three sets (unless otherwise indicated) of all shop drawings, will be retained by the PHA and one set will be returned to the Contractor. As required by the Contracting Officer, the Contractor, upon completing the work under this contract, shall furnish a complete set of all shop drawings as finally approved. These drawings shall show all changes and revisions made up to the time the work is completed and accepted.
- (i) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all shop drawings prepared by subcontractors are submitted to the Contracting Officer.

10. As-Built Drawings

- (a) "As-built drawings," as used in this clause, means drawings submitted by the Contractor or subcontractor at any tier to show the construction of a particular structure or work as actually completed under the contract. "As-built drawings" shall be synonymous with "Record drawings."
- (b) As required by the Contracting Officer, the Contractor shall provide the Contracting Officer accurate information to be used in the preparation of permanent as-built drawings. For this purpose, the Contractor shall record on one set of contract drawings all changes from the installations originally indicated, and record final locations of underground lines by depth from finish grade and by accurate horizontal offset distances to permanent surface improvements such as buildings, curbs, or edges of walks.
- (c) This clause shall be included in all subcontracts at any tier. It shall be the responsibility of the Contractor to ensure that all as-built drawings prepared by subcontractors are submitted to the Contracting Officer.

11. Material and Workmanship

- (a) All equipment, material, and articles furnished under this contract shall be new and of the most suitable grade for the purpose intended, unless otherwise specifically provided in this contract. References in the contract to equipment, material, articles, or patented processes by trade name, make, or catalog number, shall be regarded as establishing a standard of quality and shall not be construed as limiting competition. The Contractor may, at its option, use any equipment, material, article, or process that, in the judgment of, and as approved by the Contracting Officer, is equal to that named in the specifications, unless otherwise specifically provided in this contract.
- (b) Approval of equipment and materials.
 - (1) The Contractor shall obtain the Contracting Officer's approval of the machinery and mechanical and other equipment to be incorporated into the work. When requesting approval, the Contractor shall furnish to the Contracting Officer the name of the manufacturer, the model number, and other information concerning the performance, capacity, nature, and rating of the

machinery and mechanical and other equipment. When required by this contract or by the Contracting Officer, the Contractor shall also obtain the Contracting Officer's approval of the material or articles which the Contractor contemplates incorporating into the work. When requesting approval, the Contractor shall provide full information concerning the material or articles. Machinery, equipment, material, and articles that do not have the required approval shall be installed or used at the risk of subsequent rejection.

- (2) When required by the specifications or the Contracting Officer, the Contractor shall submit appropriately marked samples (and certificates related to them) for approval at the Contractor's expense, with all shipping charges prepaid. The Contractor shall label, or otherwise properly mark on the container, the material or product represented, its place of origin, the name of the producer, the Contractor's name, and the identification of the construction project for which the material or product is intended to be used.
- (3) Certificates shall be submitted in triplicate, describing each sample submitted for approval and certifying that the material, equipment or accessory complies with contract requirements. The certificates shall include the name and brand of the product, name of manufacturer, and the location where produced.
- (4) Approval of a sample shall not constitute a waiver of the PHA right to demand full compliance with contract requirements. Materials, equipment and accessories may be rejected for cause even though samples have been approved.
- (5) Wherever materials are required to comply with recognized standards or specifications, such specifications shall be accepted as establishing the technical qualities and testing methods, but shall not govern the number of tests required to be made nor modify other contract requirements. The Contracting Officer may require laboratory test reports on items submitted for approval or may approve materials on the basis of data submitted in certificates with samples. Check tests will be made on materials delivered for use only as frequently as the Contracting Officer determines necessary to insure compliance of materials with the specifications. The Contractor will assume all costs of retesting materials which fail to meet contract requirements and/or testing materials offered in substitution for those found deficient.
- (6) After approval, samples will be kept in the Project office until completion of work. They may be built into the work after a substantial quantity of the materials they represent has been built in and accepted.
- (c) Requirements concerning lead-based paint. The Contractor shall comply with the requirements concerning lead-based paint contained in the Lead-Based Paint Poisoning Prevention Act (42 U.S.C. 4821-4846) as implemented by 24 CFR Part 35.

12. Permits and Codes

- (a) The Contractor shall give all notices and comply with all applicable laws, ordinances, codes, rules and regulations. Notwithstanding the requirement of the Contractor to comply with the drawings and specifications in the contract, all work installed shall comply with all applicable codes and regulations as amended by any

waivers. Before installing the work, the Contractor shall examine the drawings and the specifications for compliance with applicable codes and regulations bearing on the work and shall immediately report any discrepancy it may discover to the Contracting Officer. Where the requirements of the drawings and specifications fail to comply with the applicable code or regulation, the Contracting Officer shall modify the contract by change order pursuant to the clause entitled Changes herein to conform to the code or regulation.

- (b) The Contractor shall secure and pay for all permits, fees, and licenses necessary for the proper execution and completion of the work. Where the PHA can arrange for the issuance of all or part of these permits, fees and licenses, without cost to the Contractor, the contract amount shall be reduced accordingly.

13. Health, Safety, and Accident Prevention

- (a) In performing this contract, the Contractor shall:
- (1) Ensure that no laborer or mechanic shall be required to work in surroundings or under working conditions which are unsanitary, hazardous, or dangerous to his/her health and/or safety as determined under construction safety and health standards promulgated by the Secretary of Labor by regulation;
 - (2) Protect the lives, health, and safety of other persons;
 - (3) Prevent damage to property, materials, supplies, and equipment; and,
 - (4) Avoid work interruptions.
- (b) For these purposes, the Contractor shall:
- (1) Comply with regulations and standards issued by the Secretary of Labor at 29 CFR Part 1926. Failure to comply may result in imposition of sanctions pursuant to the Contract Work Hours and Safety Standards Act (Public Law 91-54, 83 Stat. 96), 40 U.S.C. 3701 et seq.; and
 - (2) Include the terms of this clause in every subcontract so that such terms will be binding on each subcontractor.
- (c) The Contractor shall maintain an accurate record of exposure data on all accidents incident to work performed under this contract resulting in death, traumatic injury, occupational disease, or damage to property, materials, supplies, or equipment, and shall report this data in the manner prescribed by 29 CFR Part 1904.
- (d) The Contracting Officer shall notify the Contractor of any noncompliance with these requirements and of the corrective action required. This notice, when delivered to the Contractor or the Contractor's representative at the site of the work, shall be deemed sufficient notice of the noncompliance and corrective action required. After receiving the notice, the Contractor shall immediately take corrective action. If the Contractor fails or refuses to take corrective action promptly, the Contracting Officer may issue an order stopping all or part of the work until satisfactory corrective action has been taken. The Contractor shall not base any claim or request for equitable adjustment for additional time or money on any stop order issued under these circumstances.
- (e) The Contractor shall be responsible for its subcontractors' compliance with the provisions of this clause. The Contractor shall take such action with respect to any subcontract as the PHA, the Secretary of Housing and Urban Development, or the Secretary of Labor shall direct as a means of enforcing such provisions.

14. Temporary Heating

The Contractor shall provide and pay for temporary heating, covering, and enclosures necessary to properly protect all work and materials against damage by dampness and cold, to dry out the work, and to facilitate the completion of the work. Any permanent heating equipment used shall be turned over to the PHA in the condition and at the time required by the specifications.

15. Availability and Use of Utility Services

- (a) The PHA shall make all reasonably required amounts of utilities available to the Contractor from existing outlets and supplies, as specified in the contract. Unless otherwise provided in the contract, the amount of each utility service consumed shall be charged to or paid for by the Contractor at prevailing rates charged to the PHA or, where the utility is produced by the PHA, at reasonable rates determined by the Contracting Officer. The Contractor shall carefully conserve any utilities furnished without charge.
- (b) The Contractor, at its expense and in a manner satisfactory to the Contracting Officer, shall install and maintain all necessary temporary connections and distribution lines, and all meters required to measure the amount of each utility used for the purpose of determining charges. Before final acceptance of the work by the PHA, the Contractor shall remove all the temporary connections, distribution lines, meters, and associated paraphernalia.

16. Protection of Existing Vegetation, Structures, Equipment, Utilities, and Improvements

- (a) The Contractor shall preserve and protect all structures, equipment, and vegetation (such as trees, shrubs, and grass) on or adjacent to the work site, which are not to be removed under this contract, and which do not unreasonably interfere with the work required under this contract.
- (b) The Contractor shall only remove trees when specifically authorized to do so, and shall avoid damaging vegetation that will remain in place. If any limbs or branches of trees are broken during performance of this contract, or by the careless operation of equipment, or by workmen, the Contractor shall trim those limbs or branches with a clean cut and paint the cut with a tree-pruning compound as directed by the Contracting Officer.
- (c) The Contractor shall protect from damage all existing improvements and utilities (1) at or near the work site and (2) on adjacent property of a third party, the locations of which are made known to or should be known by the Contractor. Prior to disturbing the ground at the construction site, the Contractor shall ensure that all underground utility lines are clearly marked.
- (d) The Contractor shall shore up, brace, underpin, secure, and protect as necessary all foundations and other parts of existing structures adjacent to, adjoining, and in the vicinity of the site, which may be affected by the excavations or other operations connected with the construction of the project.
- (e) Any equipment temporarily removed as a result of work under this contract shall be protected, cleaned, and replaced in the same condition as at the time of award of this contract.

- (f) New work which connects to existing work shall correspond in all respects with that to which it connects and/or be similar to existing work unless otherwise required by the specifications.
- (g) No structural members shall be altered or in any way weakened without the written authorization of the Contracting Officer, unless such work is clearly specified in the plans or specifications.
- (h) If the removal of the existing work exposes discolored or unfinished surfaces, or work out of alignment, such surfaces shall be refinished, or the material replaced as necessary to make the continuous work uniform and harmonious. This, however, shall not be construed to require the refinishing or reconstruction of dissimilar finishes previously exposed, or finished surfaces in good condition, but in different planes or on different levels when brought together by the removal of intervening work, unless such refinishing or reconstruction is specified in the plans or specifications.
- (i) The Contractor shall give all required notices to any adjoining or adjacent property owner or other party before the commencement of any work.
- (j) The Contractor shall indemnify and save harmless the PHA from any damages on account of settlement or the loss of lateral support of adjoining property, any damages from changes in topography affecting drainage, and from all loss or expense and all damages for which the PHA may become liable in consequence of such injury or damage to adjoining and adjacent structures and their premises.
- (k) The Contractor shall repair any damage to vegetation, structures, equipment, utilities, or improvements, including those that are the property of a third party, resulting from failure to comply with the requirements of this contract or failure to exercise reasonable care in performing the work. If the Contractor fails or refuses to repair the damage promptly, the Contracting Officer may have the necessary work performed and charge the cost to the Contractor.

17. Temporary Buildings and Transportation of Materials

- (a) Temporary buildings (e.g., storage sheds, shops, offices, sanitary facilities) and utilities may be erected by the Contractor only with the approval of the Contracting Officer and shall be built with labor and materials furnished by the Contractor without expense to the PHA. The temporary buildings and utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work. With the written consent of the Contracting Officer, the buildings and utilities may be abandoned and need not be removed.
- (b) The Contractor shall, as directed by the Contracting Officer, use only established roadways, or use temporary roadways constructed by the Contractor when and as authorized by the Contracting Officer. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by any federal, state, or local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, or roads.

18. Clean Air and Water

The contractor shall comply with the Clean Air Act, as amended, 42 USC 7401 et seq., the Federal Water Pollution Control Water Act, as amended, 33 U.S.C. 1251 et seq., and standards issued pursuant thereto in the facilities in which this contract is to be performed.

19. Energy Efficiency

The Contractor shall comply with mandatory standards and policies relating to energy efficiency which are contained in the energy conservation plan issued in compliance with the Energy Policy and Conservation Act (Pub.L. 94-163) for the State in which the work under the contract is performed.

20. Inspection and Acceptance of Construction

- (a) Definitions. As used in this clause -
 - (1) "Acceptance" means the act of an authorized representative of the PHA by which the PHA approves and assumes ownership of the work performed under this contract. Acceptance may be partial or complete.
 - (2) "Inspection" means examining and testing the work performed under the contract (including, when appropriate, raw materials, equipment, components, and intermediate assemblies) to determine whether it conforms to contract requirements.
 - (3) "Testing" means that element of inspection that determines the properties or elements, including functional operation of materials, equipment, or their components, by the application of established scientific principles and procedures.
- (b) The Contractor shall maintain an adequate inspection system and perform such inspections as will ensure that the work performed under the contract conforms to contract requirements. All work is subject to PHA inspection and test at all places and at all reasonable times before acceptance to ensure strict compliance with the terms of the contract.
- (c) PHA inspections and tests are for the sole benefit of the PHA and do not: (1) relieve the Contractor of responsibility for providing adequate quality control measures; (2) relieve the Contractor of responsibility for loss or damage of the material before acceptance; (3) constitute or imply acceptance; or, (4) affect the continuing rights of the PHA after acceptance of the completed work under paragraph (j) below.
- (d) The presence or absence of the PHA inspector does not relieve the Contractor from any contract requirement, nor is the inspector authorized to change any term or condition of the specifications without the Contracting Officer's written authorization. All instructions and approvals with respect to the work shall be given to the Contractor by the Contracting Officer.
- (e) The Contractor shall promptly furnish, without additional charge, all facilities, labor, and material reasonably needed for performing such safe and convenient inspections and tests as may be required by the Contracting Officer. The PHA may charge to the Contractor any additional cost of inspection or test when work is not ready at the time specified by the Contractor for inspection or test, or when prior rejection makes reinspection or retest necessary. The PHA shall perform all inspections and tests in a manner that will not unnecessarily delay the work. Special, full size, and performance tests shall be performed as described in the contract.

- (f) The PHA may conduct routine inspections of the construction site on a daily basis.
- (g) The Contractor shall, without charge, replace or correct work found by the PHA not to conform to contract requirements, unless the PHA decides that it is in its interest to accept the work with an appropriate adjustment in contract price. The Contractor shall promptly segregate and remove rejected material from the premises.
- (h) If the Contractor does not promptly replace or correct rejected work, the PHA may (1) by contract or otherwise, replace or correct the work and charge the cost to the Contractor, or (2) terminate for default the Contractor's right to proceed.
- (i) If any work requiring inspection is covered up without approval of the PHA, it must, if requested by the Contracting Officer, be uncovered at the expense of the Contractor. If at any time before final acceptance of the entire work, the PHA considers it necessary or advisable, to examine work already completed by removing or tearing it out, the Contractor, shall on request, promptly furnish all necessary facilities, labor, and material. If such work is found to be defective or nonconforming in any material respect due to the fault of the Contractor or its subcontractors, the Contractor shall defray all the expenses of the examination and of satisfactory reconstruction. If, however, such work is found to meet the requirements of the contract, the Contracting Officer shall make an equitable adjustment to cover the cost of the examination and reconstruction, including, if completion of the work was thereby delayed, an extension of time.
- (j) The Contractor shall notify the Contracting Officer, in writing, as to the date when in its opinion all or a designated portion of the work will be substantially completed and ready for inspection. If the Architect determines that the state of preparedness is as represented, the PHA will promptly arrange for the inspection. Unless otherwise specified in the contract, the PHA shall accept, as soon as practicable after completion and inspection, all work required by the contract or that portion of the work the Contracting Officer determines and designates can be accepted separately. Acceptance shall be final and conclusive except for latent defects, fraud, gross mistakes amounting to fraud, or the PHA's right under any warranty or guarantee.

21. Use and Possession Prior to Completion

- (a) The PHA shall have the right to take possession of or use any completed or partially completed part of the work. Before taking possession of or using any work, the Contracting Officer shall furnish the Contractor a list of items of work remaining to be performed or corrected on those portions of the work that the PHA intends to take possession of or use. However, failure of the Contracting Officer to list any item of work shall not relieve the Contractor of responsibility for complying with the terms of the contract. The PHA's possession or use shall not be deemed an acceptance of any work under the contract.
- (b) While the PHA has such possession or use, the Contractor shall be relieved of the responsibility for (1) the loss of or damage to the work resulting from the PHA's possession or use, notwithstanding the terms of the clause entitled Permits and Codes herein; (2) all maintenance costs on the areas occupied; and, (3) furnishing heat, light, power, and water used in the areas

occupied without proper remuneration therefore. If prior possession or use by the PHA delays the progress of the work or causes additional expense to the Contractor, an equitable adjustment shall be made in the contract price or the time of completion, and the contract shall be modified in writing accordingly.

22. Warranty of Title

The Contractor warrants good title to all materials, supplies, and equipment incorporated in the work and agrees to deliver the premises together with all improvements thereon free from any claims, liens or charges, and agrees further that neither it nor any other person, firm or corporation shall have any right to a lien upon the premises or anything appurtenant thereto.

23. Warranty of Construction

- (a) In addition to any other warranties in this contract, the Contractor warrants, except as provided in paragraph (j) of this clause, that work performed under this contract conforms to the contract requirements and is free of any defect in equipment, material, or workmanship performed by the Contractor or any subcontractor or supplier at any tier. This warranty shall continue for a period of _____ (one year unless otherwise indicated) from the date of final acceptance of the work. If the PHA takes possession of any part of the work before final acceptance, this warranty shall continue for a period of (one year unless otherwise indicated) from the date that the PHA takes possession.
- (b) The Contractor shall remedy, at the Contractor's expense, any failure to conform, or any defect. In addition, the Contractor shall remedy, at the Contractor's expense, any damage to PHA-owned or controlled real or personal property when the damage is the result of—
 - (1) The Contractor's failure to conform to contract requirements; or
 - (2) Any defects of equipment, material, workmanship or design furnished by the Contractor.
- (c) The Contractor shall restore any work damaged in fulfilling the terms and conditions of this clause. The Contractor's warranty with respect to work repaired or replaced will run for (one year unless otherwise indicated) from the date of repair or replacement.
- (d) The Contracting Officer shall notify the Contractor, in writing, within a reasonable time after the discovery of any failure, defect or damage.
- (e) If the Contractor fails to remedy any failure, defect, or damage within a reasonable time after receipt of notice, the PHA shall have the right to replace, repair or otherwise remedy the failure, defect, or damage at the Contractor's expense.
- (f) With respect to all warranties, express or implied, from subcontractors, manufacturers, or suppliers for work performed and materials furnished under this contract, the Contractor shall:
 - (1) Obtain all warranties that would be given in normal commercial practice;
 - (2) Require all warranties to be executed in writing, for the benefit of the PHA; and,
 - (3) Enforce all warranties for the benefit of the PHA.
- (g) In the event the Contractor's warranty under paragraph (a) of this clause has expired, the PHA may bring suit at its own expense to enforce a subcontractor's, manufacturer's or supplier's warranty.

- (h) Unless a defect is caused by the negligence of the Contractor or subcontractor or supplier at any tier, the Contractor shall not be liable for the repair of any defect of material or design furnished by the PHA nor for the repair of any damage that results from any defect in PHA furnished material or design.
- (i) Notwithstanding any provisions herein to the contrary, the establishment of the time periods in paragraphs (a) and (c) above relate only to the specific obligation of the Contractor to correct the work, and have no relationship to the time within which its obligation to comply with the contract may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to its obligation other than specifically to correct the work.
- (j) This warranty shall not limit the PHA's rights under the Inspection and Acceptance of Construction clause of this contract with respect to latent defects, gross mistakes or fraud.

24. Prohibition Against Liens

The Contractor is prohibited from placing a lien on the PHA's property. This prohibition shall apply to all subcontractors at any tier and all materials suppliers.

Administrative Requirements

25. Contract Period

The Contractor shall complete the Base Bid scope of work for this contract within **270** calendar days of the effective date of the contract, or within the time schedule established in the notice to proceed issued by the Contracting Officer.

26. Order of Provisions

In the event of a conflict between these General Conditions and the Specifications, the General Conditions shall prevail. In the event of a conflict between the contract and any applicable state or local law or regulation, the state or local law or regulation shall prevail; provided that such state or local law or regulation does not conflict with, or is less restrictive than applicable federal law, regulation, or Executive Order. In the event of such a conflict, applicable federal law, regulation, and Executive Order shall prevail.

27. Payments

- (a) The PHA shall pay the Contractor the price as provided in this contract.
- (b) The PHA shall make progress payments approximately every 30 days as the work proceeds, on estimates of work accomplished which meets the standards of quality established under the contract, as approved by the Contracting Officer. The PHA may, subject to written determination and approval of the Contracting Officer, make more frequent payments to contractors which are qualified small businesses.
- (c) Before the first progress payment under this contract, the Contractor shall furnish, in such detail as requested by the Contracting Officer, a breakdown of the total contract price showing the amount included therein for each principal category of the work, which shall substantiate the payment amount requested in order to provide a

basis for determining progress payments. The breakdown shall be approved by the Contracting Officer and must be acceptable to HUD. If the contract covers more than one project, the Contractor shall furnish a separate breakdown for each. The values and quantities employed in making up this breakdown are for determining the amount of progress payments and shall not be construed as a basis for additions to or deductions from the contract price. The Contractor shall prorate its overhead and profit over the construction period of the contract.

- (d) The Contractor shall submit, on forms provided by the PHA, periodic estimates showing the value of the work performed during each period based upon the approved submitted not later than _____ days in advance of the date set for payment and are subject to correction and revision as required. The estimates must be approved by the Contracting Officer with the concurrence of the Architect prior to payment. If the contract covers more than one project, the Contractor shall furnish a separate progress payment estimate for each.

- (e) Along with each request for progress payments and the required estimates, the Contractor shall furnish the following certification, or payment shall not be made: I hereby certify, to the best of my knowledge and belief, that:

- (1) The amounts requested are only for performance in accordance with the specifications, terms, and conditions of the contract;
- (2) Payments to subcontractors and suppliers have been made from previous payments received under the contract, and timely payments will be made from the proceeds of the payment covered by this certification, in accordance with subcontract agreements; and,
- (3) This request for progress payments does not include any amounts which the prime contractor intends to withhold or retain from a subcontractor or supplier in accordance with the terms and conditions of the subcontract.

Name:

Title:

Date:

- (f) Except as otherwise provided in State law, the PHA shall retain ten (10) percent of the amount of progress payments until completion and acceptance of all work under the contract; except, that if upon completion of 50 percent of the work, the Contracting Officer, after consulting with the Architect, determines that the Contractor's performance and progress are satisfactory, the PHA may make the remaining payments in full for the work subsequently completed. If the Contracting Officer subsequently determines that the Contractor's performance and progress are unsatisfactory, the PHA shall reinstate the ten (10) percent (or other percentage as provided in State law) retainage until such time as the Contracting Officer determines that performance and progress are satisfactory.
- (g) The Contracting Officer may authorize material delivered on the site and preparatory work done to be taken into consideration when computing progress payments.

Material delivered to the Contractor at locations other than the site may also be taken into consideration if the Contractor furnishes satisfactory evidence that (1) it has acquired title to such material; (2) the material is properly stored in a bonded warehouse, storage yard, or similar suitable place as may be approved by the Contracting Officer; (3) the material is insured to cover its full value; and (4) the material will be used to perform this contract. Before any progress payment which includes delivered material is made, the Contractor shall furnish such documentation as the Contracting Officer may require to assure the protection of the PHA's interest in such materials. The Contractor shall remain responsible for such stored material notwithstanding the transfer of title to the PHA.

- (h) All material and work covered by progress payments made shall, at the time of payment become the sole property of the PHA, but this shall not be construed as (1) relieving the Contractor from the sole responsibility for all material and work upon which payments have been made or the restoration of any damaged work; or, (2) waiving the right of the PHA to require the fulfillment of all of the terms of the contract. In the event the work of the Contractor has been damaged by other contractors or persons other than employees of the PHA in the course of their employment, the Contractor shall restore such damaged work without cost to the PHA and to seek redress for its damage only from those who directly caused it.
- (i) The PHA shall make the final payment due the Contractor under this contract after (1) completion and final acceptance of all work; and (2) presentation of release of all claims against the PHA arising by virtue of this contract, other than claims, in stated amounts, that the Contractor has specifically excepted from the operation of the release. Each such exception shall embrace no more than one claim, the basis and scope of which shall be clearly defined. The amounts for such excepted claims shall not be included in the request for final payment. A release may also be required of the assignee if the Contractor's claim to amounts payable under this contract has been assigned.
- (j) Prior to making any payment, the Contracting Officer may require the Contractor to furnish receipts or other evidence of payment from all persons performing work and supplying material to the Contractor, if the Contracting Officer determines such evidence is necessary to substantiate claimed costs.
- (k) The PHA shall not; (1) determine or adjust any claims for payment or disputes arising there under between the Contractor and its subcontractors or material suppliers; or, (2) withhold any moneys for the protection of the subcontractors or material suppliers. The failure or refusal of the PHA to withhold moneys from the Contractor shall in nowise impair the obligations of any surety or sureties under any bonds furnished under this contract.

28. Contract Modifications

- (a) Only the Contracting Officer has authority to modify any term or condition of this contract. Any contract modification shall be authorized in writing.
- (b) The Contracting Officer may modify the contract unilaterally (1) pursuant to a specific authorization stated in a contract clause (e.g., Changes); or (2) for administrative matters which do not change the rights or

responsibilities of the parties (e.g., change in the PHA address). All other contract modifications shall be in the form of supplemental agreements signed by the Contractor and the Contracting Officer.

- (c) When a proposed modification requires the approval of HUD prior to its issuance (e.g., a change order that exceeds the PHA's approved threshold), such modification shall not be effective until the required approval is received by the PHA.

29. Changes

- (a) The Contracting Officer may, at any time, without notice to the sureties, by written order designated or indicated to be a change order, make changes in the work within the general scope of the contract including changes:
 - (1) In the specifications (including drawings and designs);
 - (2) In the method or manner of performance of the work;
 - (3) PHA-furnished facilities, equipment, materials, services, or site; or,
 - (4) Directing the acceleration in the performance of the work.
- (b) Any other written order or oral order (which, as used in this paragraph (b), includes direction, instruction, interpretation, or determination) from the Contracting Officer that causes a change shall be treated as a change order under this clause; provided, that the Contractor gives the Contracting Officer written notice stating (1) the date, circumstances and source of the order and (2) that the Contractor regards the order as a change order.
- (c) Except as provided in this clause, no order, statement or conduct of the Contracting Officer shall be treated as a change under this clause or entitle the Contractor to an equitable adjustment.
- (d) If any change under this clause causes an increase or decrease in the Contractor's cost of, or the time required for the performance of any part of the work under this contract, whether or not changed by any such order, the Contracting Officer shall make an equitable adjustment and modify the contract in writing. However, except for a adjustment based on defective specifications, no proposal for any change under paragraph (b) above shall be allowed for any costs incurred more than 20 days (5 days for oral orders) before the Contractor gives written notice as required. In the case of defective specifications for which the PHA is responsible, the equitable adjustment shall include any increased cost reasonably incurred by the Contractor in attempting to comply with the defective specifications.
- (e) The Contractor must assert its right to an adjustment under this clause within 30 days after (1) receipt of a written change order under paragraph (a) of this clause, or (2) the furnishing of a written notice under paragraph (b) of this clause, by submitting a written statement describing the general nature and the amount of the proposal. If the facts justify it, the Contracting Officer may extend the period for submission. The proposal may be included in the notice required under paragraph (b) above. No proposal by the Contractor for an equitable adjustment shall be allowed if asserted after final payment under this contract.
- (f) The Contractor's written proposal for equitable adjustment shall be submitted in the form of a lump sum proposal supported with an itemized breakdown of all increases and decreases in the contract in at least the following details:

- (1) Direct Costs. Materials (list individual items, the quantity and unit cost of each, and the aggregate cost); Transportation and delivery costs associated with materials; Labor breakdowns by hours or unit costs (identified with specific work to be performed); Construction equipment exclusively necessary for the change; Costs of preparation and/ or revision to shop drawings resulting from the change; Worker's Compensation and Public Liability Insurance; Employment taxes under FICA and FUTA; and, Bond Costs when size of change warrants revision.
- (2) Indirect Costs. Indirect costs may include overhead, general and administrative expenses, and fringe benefits not normally treated as direct costs.
- (3) Profit. The amount of profit shall be negotiated and may vary according to the nature, extent, and complexity of the work required by the change. The allowability of the direct and indirect costs shall be determined in accordance with the Contract Cost Principles and Procedures for Commercial Firms in Part 31 of the Federal Acquisition Regulation (48 CFR 1-31), as implemented by HUD Handbook 2210.18, in effect on the date of this contract. The Contractor shall not be allowed a profit on the profit received by any subcontractor. Equitable adjustments for deleted work shall include a credit for profit and may include a credit for indirect costs. On proposals covering both increases and decreases in the amount of the contract, the application of indirect costs and profit shall be on the net-change in direct costs for the Contractor or subcontractor performing the work.
- (g) The Contractor shall include in the proposal its request for time extension (if any), and shall include sufficient information and dates to demonstrate whether and to what extent the change will delay the completion of the contract in its entirety.
- (h) The Contracting Officer shall act on proposals within 30 days after their receipt, or notify the Contractor of the date when such action will be taken.
- (i) Failure to reach an agreement on any proposal shall be a dispute under the clause entitled Disputes herein. Nothing in this clause, however, shall excuse the Contractor from proceeding with the contract as changed.
- (j) Except in an emergency endangering life or property, no change shall be made by the Contractor without a prior order from the Contracting Officer.

30. Suspension of Work

- (a) The Contracting Officer may order the Contractor in writing to suspend, delay, or interrupt all or any part of the work of this contract for the period of time that the Contracting Officer determines appropriate for the convenience of the PHA.
- (b) If the performance of all or any part of the work is, for an unreasonable period of time, suspended, delayed, or interrupted (1) by an act of the Contracting Officer in the administration of this contract, or (2) by the Contracting Officer's failure to act within the time specified (or within a reasonable time if not specified) in this contract an adjustment shall be made for any increase in the cost of performance of the contract (excluding profit) necessarily caused by such unreasonable suspension, delay, or interruption and the contract modified in writing accordingly. However, no adjustment shall be made under this clause for any suspension, delay, or interruption to the extent that performance would have

been so suspended, delayed, or interrupted by any other cause, including the fault or negligence of the Contractor or for which any equitable adjustment is provided for or excluded under any other provision of this contract.

- (c) A claim under this clause shall not be allowed (1) for any costs incurred more than 20 days before the Contractor shall have notified the Contracting Officer in writing of the act or failure to act involved (but this requirement shall not apply as to a claim resulting from a suspension order); and, (2) unless the claim, in an amount stated, is asserted in writing as soon as practicable after the termination of the suspension, delay, or interruption, but not later than the date of final payment under the contract.

31. Disputes

- (a) "Claim," as used in this clause, means a written demand or written assertion by one of the contracting parties seeking, as a matter of right, the payment of money in a sum certain, the adjustment or interpretation of contract terms, or other relief arising under or relating to the contract. A claim arising under the contract, unlike a claim relating to the contract, is a claim that can be resolved under a contract clause that provides for the relief sought by the claimant. A voucher, invoice, or other routine request for payment that is not in dispute when submitted is not a claim. The submission may be converted to a claim by complying with the requirements of this clause, if it is disputed either as to liability or amount or is not acted upon in a reasonable time.
- (b) Except for disputes arising under the clauses entitled Labor Standards - Davis Bacon and Related Acts, herein, all disputes arising under or relating to this contract, including any claims for damages for the alleged breach thereof which are not disposed of by agreement, shall be resolved under this clause.
- (c) All claims by the Contractor shall be made in writing and submitted to the Contracting Officer for a written decision. A claim by the PHA against the Contractor shall be subject to a written decision by the Contracting Officer.
- (d) The Contracting Officer shall, within 60 (unless otherwise indicated) days after receipt of the request, decide the claim or notify the Contractor of the date by which the decision will be made.
- (e) The Contracting Officer's decision shall be final unless the Contractor (1) appeals in writing to a higher level in the PHA in accordance with the PHA's policy and procedures, (2) refers the appeal to an independent mediator or arbitrator, or (3) files suit in a court of competent jurisdiction. Such appeal must be made within (30 unless otherwise indicated) days after receipt of the Contracting Officer's decision.
- (f) The Contractor shall proceed diligently with performance of this contract, pending final resolution of any request for relief, claim, appeal, or action arising under or relating to the contract, and comply with any decision of the Contracting Officer.

32. Default

- (a) If the Contractor refuses or fails to prosecute the work, or any separable part thereof, with the diligence that will insure its completion within the time specified in this contract, or any extension thereof, or fails to complete said work within this time, the Contracting Officer may, by written notice to the Contractor, terminate the right to

proceed with the work (or separable part of the work) that has been delayed. In this event, the PHA may take over the work and complete it, by contract or otherwise, and may take possession of and use any materials, equipment, and plant on the work site necessary for completing the work. The Contractor and its sureties shall be liable for any damage to the PHA resulting from the Contractor's refusal or failure to complete the work within the specified time, whether or not the Contractor's right to proceed with the work is terminated. This liability includes any increased costs incurred by the PHA in completing the work.

- (b) The Contractor's right to proceed shall not be terminated or the Contractor charged with damages under this clause if—
- (1) The delay in completing the work arises from unforeseeable causes beyond the control and without the fault or negligence of the Contractor. Examples of such causes include (i) acts of God, or of the public enemy, (ii) acts of the PHA or other governmental entity in either its sovereign or contractual capacity, (iii) acts of another contractor in the performance of a contract with the PHA, (iv) fires, (v) floods, (vi) epidemics, (vii) quarantine restrictions, (viii) strikes, (ix) freight embargoes, (x) unusually severe weather, or (xi) delays of subcontractors or suppliers at any tier arising from unforeseeable causes beyond the control and without the fault or negligence of both the Contractor and the subcontractors or suppliers; and
 - (2) The Contractor, within days (10 days unless otherwise indicated) from the beginning of such delay (unless extended by the Contracting Officer) notifies the Contracting Officer in writing of the causes of delay. The Contracting Officer shall ascertain the facts and the extent of the delay. If, in the judgment of the Contracting Officer, the findings of fact warrant such action, time for completing the work shall be extended by written modification to the contract. The findings of the Contracting Officer shall be reduced to a written decision which shall be subject to the provisions of the Disputes clause of this contract.
- (c) If, after termination of the Contractor's right to proceed, it is determined that the Contractor was not in default, or that the delay was excusable, the rights and obligations of the parties will be the same as if the termination had been for convenience of the PHA.

33. Liquidated Damages

- (a) If the Contractor fails to complete the work within the time specified in the contract, or any extension, as specified in the clause entitled Default of this contract, the Contractor shall pay to the PHA as liquidated damages, the sum of \$ _____ [Contracting Officer insert amount] for each day of delay. If different completion dates are specified in the contract for separate parts or stages of the work, the amount of liquidated damages shall be assessed on those parts or stages which are delayed. To the extent that the Contractor's delay or nonperformance is excused under another clause in this contract, liquidated damages shall not be due the PHA. The Contractor remains liable for damages caused other than by delay.
- (b) If the PHA terminates the Contractor's right to proceed, the resulting damage will consist of liquidated damages until such reasonable time as may be required for final

completion of the work together with any increased costs occasioned the PHA in completing the work.

- (c) If the PHA does not terminate the Contractor's right to proceed, the resulting damage will consist of liquidated damages until the work is completed or accepted.

34. Termination for Convenience

- (a) The Contracting Officer may terminate this contract in whole, or in part, whenever the Contracting Officer determines that such termination is in the best interest of the PHA. Any such termination shall be effected by delivery to the Contractor of a Notice of Termination specifying the extent to which the performance of the work under the contract is terminated, and the date upon which such termination becomes effective.
- (b) If the performance of the work is terminated, either in whole or in part, the PHA shall be liable to the Contractor for reasonable and proper costs resulting from such termination upon the receipt by the PHA of a properly presented claim setting out in detail: (1) the total cost of the work performed to date of termination less the total amount of contract payments made to the Contractor; (2) the cost (including reasonable profit) of settling and paying claims under subcontracts and material orders for work performed and materials and supplies delivered to the site, payment for which has not been made by the PHA to the Contractor or by the Contractor to the subcontractor or supplier; (3) the cost of preserving and protecting the work already performed until the PHA or assignee takes possession thereof or assumes responsibility therefore; (4) the actual or estimated cost of legal and accounting services reasonably necessary to prepare and present the termination claim to the PHA; and (5) an amount constituting a reasonable profit on the value of the work performed by the Contractor.
- (c) The Contracting Officer will act on the Contractor's claim within days (60 days unless otherwise indicated) of receipt of the Contractor's claim.
- (d) Any disputes with regard to this clause are expressly made subject to the provisions of the Disputes clause of this contract.

35. Assignment of Contract

The Contractor shall not assign or transfer any interest in this contract; except that claims for monies due or to become due from the PHA under the contract may be assigned to a bank, trust company, or other financial institution. Such assignments of claims shall only be made with the written concurrence of the Contracting Officer. If the Contractor is a partnership, this contract shall inure to the benefit of the surviving or remaining member(s) of such partnership as approved by the Contracting Officer.

36. Insurance

- (a) Before commencing work, the Contractor and each subcontractor shall furnish the PHA with certificates of insurance showing the following insurance is in force and will insure all operations under the Contract:
- (1) Workers' Compensation, in accordance with state or Territorial Workers' Compensation laws.
 - (2) Commercial General Liability with a combined single limit for bodily injury and property damage of not less than \$ _____ [Contracting Officer insert amount]

(c) The Contractor shall agree to post in conspicuous places available to employees and applicants for employment the notices to be provided by the Contracting Officer setting forth the provisions of this nondiscrimination clause.

(d) The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor/Seller, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

(e) The Contractor shall send, to each labor union or representative of workers with which it has a collective bargaining agreement or other contract or understanding, the notice to be provided by the Contracting Officer advising the labor union or workers' representative of the Contractor's commitments under this clause, and post copies of the notice in conspicuous places available to employees and applicants for employment.

(f) The Contractor shall comply with Executive Order 11246, as amended, and the rules, regulations, and orders of the Secretary of Labor.

(g) The Contractor shall furnish all information and reports required by Executive Order 11246, as amended, Section 503 of the Rehabilitation Act of 1973, as amended, and by rules, regulations, and orders of the Secretary of Labor, or pursuant thereto. The Contractor shall permit access to its books, records, and accounts by the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.

(h) In the event of a that the Contractor is in non-compliance with the nondiscrimination clauses of this contract or with any of such rules, regulations, or orders, this contract may be canceled, terminated or suspended in whole or in part and the contractor/seller may be declared ineligible for further Government contracts in accordance with procedures authorized in Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation, or order of the Secretary of Labor, or as otherwise provided by law.

(i) The contractor/seller will include the provisions of paragraphs (a) through (h) in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each sub[contractor/seller] or vendor. The [contractor/seller] will take such action with respect to any subcontract or purchase order as may be directed by the Secretary of Labor as a means of enforcing such provisions including sanctions for noncompliance: Provided, however, that in the event the [contractor/seller] becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction, the [contractor/seller] may request the United States to enter into such litigation to protect the interests of the United States.

(j) Compliance with the requirements of this clause shall be to the maximum extent consistent with, but not in derogation of, compliance with section 7(b) of the Indian Self-Determination and Education Assistance Act and the Indian Preference clause of this contract.

40. Employment, Training, and Contracting Opportunities for Low-Income Persons, Section 3 of the Housing and Urban Development Act of 1968.

(a) The work to be performed under this contract is subject to the requirements of section 3 of the Housing and Urban Development Act of 1968, as amended, 12 U.S.C. 1701u (section 3). The purpose of section 3 is to ensure that employment and other economic opportunities generated by HUD assistance or HUD-assisted projects covered by section 3, shall, to the greatest extent feasible, be directed to low- and very low-income persons, particularly persons who are recipients of HUD assistance for housing.

(b) The parties to this contract agree to comply with HUD's regulations in 24 CFR Part 135, which implement section 3. As evidenced by their execution of this contract, the parties to this contract certify that they are under no contractual or other impediment that would prevent them from complying with the Part 135 regulations.

(c) The contractor agrees to send to each labor organization or representative of workers with which the contractor has a collective bargaining agreement or other understanding, if any, a notice advising the labor organization or workers' representative of the contractor's commitments under this section 3 clause, and will post copies of the notice in conspicuous places at the work site where both employees and applicants for training and employment positions can see the notice. The notice shall describe the section 3 preference, shall set forth minimum number and job titles subject to hire, availability of apprenticeship and training positions, the qualifications for each; and the name and location of the person(s) taking applications for each of the positions; and the anticipated date the work shall begin.

(d) The contractor agrees to include this section 3 clause in every subcontract subject to compliance with regulations in 24 CFR Part 135, and agrees to take appropriate action, as provided in an applicable provision of the subcontract or in this section 3 clause, upon a finding that the subcontractor is in violation of the regulations in 24 CFR Part 135. The contractor will not subcontract with any subcontractor where the contractor has notice or knowledge that the subcontractor has been found in violation of the regulations in 24 CFR Part 135.

(e) The contractor will certify that any vacant employment positions, including training positions, that are filled (1) after the contractor is selected but before the contract is executed, and (2) with persons other than those to whom the regulations of 24 CFR Part 135 require employment opportunities to be directed, were not filled to circumvent the contractor's obligations under 24 CFR Part 135.

(f) Noncompliance with HUD's regulations in 24 CFR Part 135 may result in sanctions, termination of this contract for default, and debarment or suspension from future HUD assisted contracts.

(g) With respect to work performed in connection with section 3 covered Indian housing assistance, section 7(b) of the Indian Self-Determination and Education Assistance Act (25 U.S.C. 450e) also applies to the work to be performed under this contract. Section 7(b) requires that to the greatest extent feasible (i) preference and opportunities for training and employment shall be given to Indians, and (ii) preference in the award of contracts and subcontracts shall be given to Indian organizations and Indian-owned Economic Enterprises. Parties to this contract that are subject to the provisions of section 3 and section 7(b) agree to comply with section 3 to the maximum extent feasible, but not in derogation of compliance with section 7(b).

41. Interest of Members of Congress

No member of or delegate to the Congress of the United States of America shall be admitted to any share or part of this contract or to any benefit that may arise therefrom.

42. Interest of Members, Officers, or Employees and Former Members, Officers, or Employees

No member, officer, or employee of the PHA, no member of the governing body of the locality in which the project is situated, no member of the governing body of the locality in which the PHA was activated, and no other public official of such locality or localities who exercises any functions or responsibilities with respect to the project, shall, during his or her tenure, or for one year thereafter, have any interest, direct or indirect, in this contract or the proceeds thereof.

43. Limitations on Payments made to Influence Certain Federal Financial Transactions

- (a) The Contractor agrees to comply with Section 1352 of Title 31, United States Code which prohibits the use of Federal appropriated funds to pay any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, and officer or employee of Congress, or an employee of a Member of Congress in connection with any of the following covered Federal actions: the awarding of any Federal contract; the making of any Federal grant; the making of any Federal loan; the entering into of any cooperative agreement; or the modification of any Federal contract, grant, loan, or cooperative agreement.
- (b) The Contractor further agrees to comply with the requirement of the Act to furnish a disclosure (OMB Standard Form LLL, Disclosure of Lobbying Activities) if any funds other than Federal appropriated funds (including profit or fee received under a covered Federal transaction) have been paid, or will be paid, to any person for influencing or attempting to influence an officer or employee of any agency, a Member of Congress, an officer or employee of Congress, or an employee of a Member of Congress in connection with a Federal contract, grant, loan, or cooperative agreement.

44. Royalties and Patents

The Contractor shall pay all royalties and license fees. It shall defend all suits or claims for infringement of any patent rights and shall save the PHA harmless from loss on account thereof; except that the PHA shall be responsible for all such loss when a particular design, process or the product of a particular manufacturer or manufacturers is specified and the Contractor has no reason to believe that the specified design, process, or product is an infringement. If, however, the Contractor has reason to believe that any design, process or product specified is an infringement of a patent, the Contractor shall promptly notify the Contracting Officer. Failure to give such notice shall make the Contractor responsible for resultant loss.

45. Examination and Retention of Contractor's Records

- (a) The PHA, HUD, or Comptroller General of the United States, or any of their duly authorized representatives shall, until 3 years after final payment under this contract, have access to and the right to examine any of the Contractor's directly pertinent books, documents, papers, or other records involving transactions related to this contract for the purpose of making audit, examination, excerpts, and transcriptions.
- (b) The Contractor agrees to include in first-tier subcontracts under this contract a clause substantially the same as paragraph (a) above. "Subcontract," as used in this clause, excludes purchase orders not exceeding \$10,000.
- (c) The periods of access and examination in paragraphs (a) and (b) above for records relating to (1) appeals under the Disputes clause of this contract, (2) litigation or settlement of claims arising from the performance of this contract, or (3) costs and expenses of this contract to which the PHA, HUD, or Comptroller General or any of their duly authorized representatives has taken exception shall continue until disposition of such appeals, litigation, claims, or exceptions.

46. Labor Standards - Davis-Bacon and Related Acts

If the total amount of this contract exceeds \$2,000, the Federal labor standards set forth in the clause below shall apply to the development or construction work to be performed under the contract.

- (a) Minimum Wages.
- (1) All laborers and mechanics employed under this contract in the development or construction of the project(s) involved will be paid unconditionally and not less often than once a week, and without subsequent deduction or rebate on any account (except such payroll deductions as are permitted by regulations issued by the Secretary of Labor under the Copeland Act (29 CFR Part 3)), the full amount of wages and bona fide fringe benefits (or cash equivalents thereof) due at time of payment computed at rates not less than those contained in the wage determination of the Secretary of Labor which is attached hereto and made a part hereof, regardless of any contractual relationship which may be alleged to exist between the Contractor and such laborers and mechanics. Contributions made or costs reasonably anticipated for bona fide fringe benefits under Section 1(b)(2) of the Davis-Bacon Act on behalf of laborers or mechanics are considered wages paid to such laborers or mechanics, subject to the provisions of 29 CFR 5.5(a)(1)(iv); also, regular contributions made or costs incurred for more than a weekly period (but not less often than quarterly) under plans, funds, or programs which cover the regular weekly period, are deemed to be constructively made or incurred during such weekly period. Such laborers and mechanics shall be paid the appropriate wage rate and fringe benefits in the wage determination for the classification of work actually performed, without regard to skill, except as provided in 29 CFR 5.5(a)(4). Laborers or mechanics performing work in more than one classification may be compensated at the rate specified for each classification for the time actually worked therein; provided, that the employer's payroll records accurately set forth the time spent in each classification in which work is performed. The wage determination (including any additional classification and wage rates conformed under 29 CFR 5.5(a)(1)(ii) and the Davis-Bacon poster (WH-1321) shall

be posted at all times by the Contractor and its subcontractors at the site of the work in a prominent and accessible place where it can be easily seen by the workers.

- (2) (i) Any class of laborers or mechanics, including helpers, which is not listed in the wage determination and which is to be employed under the contract shall be classified in conformance with the wage determination. HUD shall approve an additional classification and wage rate and fringe benefits therefor only when all the following criteria have been met: (A) The work to be performed by the classification requested is not performed by a classification in the wage determination; and (B) The classification is utilized in the area by the construction industry; and (C) The proposed wage rate, including any bona fide fringe benefits, bears a reasonable relationship to the wage rates contained in the wage determination.
- (ii) If the Contractor and the laborers and mechanics to be employed in the classification (if known), or their representatives, and HUD or its designee agree on the classification and wage rate (including the amount designated for fringe benefits where appropriate), a report of the action taken shall be sent by HUD or its designee to the Administrator of the Wage and Hour Division, Employee Standards Administration, U.S. Department of Labor, Washington, DC 20210. The Administrator, or an authorized representative, will approve, modify, or disapprove every additional classification action within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iii) In the event the Contractor, the laborers or mechanics to be employed in the classification or their representatives, and HUD or its designee do not agree on the proposed classification and wage rate (including the amount designated for fringe benefits, where appropriate), HUD or its designee shall refer the questions, including the views of all interested parties and the recommendation of HUD or its designee, to the Administrator of the Wage and Hour Division for determination. The Administrator, or an authorized representative, will issue a determination within 30 days of receipt and so advise HUD or its designee or will notify HUD or its designee within the 30-day period that additional time is necessary.
- (iv) The wage rate (including fringe benefits where appropriate) determined pursuant to subparagraphs (a)(2)(ii) or (iii) of this clause shall be paid to all workers performing work in the classification under this contract from the first day on which work is performed in classification.
- (3) Whenever the minimum wage rate prescribed in the contract for a class of laborers or mechanics includes a fringe benefit which is not expressed as an hourly rate, the Contractor shall either pay the benefit as stated in the wage determination or shall pay another bona fide fringe benefit or an hourly cash equivalent thereof.
- (4) If the Contractor does not make payments to a trustee or other third person, the Contractor may consider as part of the wages of any laborer or mechanic the

amount of any costs reasonably anticipated in providing bona fide fringe benefits under a plan or program; provided, that the Secretary of Labor has found, upon the written request of the Contractor, that the applicable standards of the Davis-Bacon Act have been met. The Secretary of Labor may require the Contractor to set aside in a separate account assets for the meeting of obligations under the plan or program.

- (b) Withholding of funds. HUD or its designee shall, upon its own action or upon written request of an authorized representative of the Department of Labor, withhold or cause to be withheld from the Contractor under this contract or any other Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to Davis-Bacon prevailing wage requirements, which is held by the same prime Contractor, so much of the accrued payments or advances as may be considered necessary to pay laborers and mechanics, including apprentices, trainees, and helpers, employed by the Contractor or any subcontractor the full amount of wages required by the contract. In the event of failure to pay any laborer or mechanic, including any apprentice, trainee, or helper, employed or working in the construction or development of the project, all or part of the wages required by the contract, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds until such violations have ceased. HUD or its designee may, after written notice to the Contractor, disburse such amounts withheld for and on account of the Contractor or subcontractor to the respective employees to whom they are due.
- (c) Payrolls and basic records.
- (1) Payrolls and basic records relating thereto shall be maintained by the Contractor during the course of the work and preserved for a period of three years thereafter for all laborers and mechanics working in the construction or development of the project. Such records shall contain the name, address, and social security number of each such worker, his or her correct classification, hourly rates of wages paid (including rates of contributions or costs anticipated for bona fide fringe benefits or cash equivalents thereof of the types described in section 1(b)(2)(B) of the Davis-Bacon Act), daily and weekly number of hours worked, deductions made, and actual wages paid. Whenever the Secretary of Labor has found, under 29 CFR 5.5(a)(1)(iv), that the wages of any laborer or mechanic include the amount of costs reasonably anticipated in providing benefits under a plan or program described in section 1(b)(2)(B) of the Davis-Bacon Act, the Contractor shall maintain records which show that the commitment to provide such benefits is enforceable, that the plan or program is financially responsible, and that the plan or program has been communicated in writing to the laborers or mechanics affected, and records which show the costs anticipated or the actual cost incurred in providing such benefits. Contractors employing apprentices or trainees under approved programs shall maintain written evidence of the registration of apprenticeship programs and certification of trainee programs, the registration of the apprentices and trainees, and the ratios and wage rates prescribed in the applicable programs.

- (2) (i) The Contractor shall submit weekly for each week in which any contract work is performed a copy of all payrolls to the Contracting Officer for transmission to HUD or its designee. The payrolls submitted shall set out accurately and completely all of the information required to be maintained under subparagraph (c)(1) of this clause. This information may be submitted in any form desired. Optional Form WH-347 (Federal Stock Number 029-005-00014-1) is available for this purpose and may be purchased from the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402. The Contractor is responsible for the submission of copies of payrolls by all subcontractors. (Approved by the Office of Management and Budget under OMB Control Number 1214-0149.)
- (ii) Each payroll submitted shall be accompanied by a "Statement of Compliance," signed by the Contractor or subcontractor or his or her agent who pays or supervises the payment of the persons employed under the contract and shall certify the following:
- (A) That the payroll for the payroll period contains the information required to be maintained under paragraph (c) (1) of this clause and that such information is correct and complete;
- (B) That each laborer or mechanic (including each helper, apprentice, and trainee) employed on the contract during the payroll period has been paid the full weekly wages earned, without rebate, either directly or indirectly, and that no deductions have been made either directly or indirectly from the full wages earned, other than permissible deductions as set forth in 29 CFR Part 3; and
- (C) That each laborer or mechanic has been paid not less than the applicable wage rates and fringe benefits or cash equivalents for the classification of work performed, as specified in the applicable wage determination incorporated into the contract.
- (iii) The weekly submission of a properly executed certification set forth on the reverse side of Optional Form WH-347 shall satisfy the requirements for submission of the "Statement of Compliance" required by subparagraph (c)(2)(ii) of this clause.
- (iv) The falsification of any of the above certifications may subject the Contractor or subcontractor to civil or criminal prosecution under Section 1001 of Title 18 and Section 3729 of Title 31 of the United States Code.
- (3) The Contractor or subcontractor shall make the records required under subparagraph (c)(1) available for inspection, copying, or transcription by authorized representatives of HUD or its designee, the Contracting Officer, or the Department of Labor and shall permit such representatives to interview employees during working hours on the job. If the Contractor or subcontractor fails to submit the required records or to make them available, HUD or its designee may, after written notice to the Contractor, take such action as may be necessary to cause the suspension of any further payment, advance, or guarantee of funds. Furthermore, failure to submit the required records upon request or to

make such records available may be grounds for debarment action pursuant to 29 CFR 5.12.

- (d) (1) Apprentices. Apprentices will be permitted to work at less than the predetermined rate for the work they performed when they are employed pursuant to and individually registered in a bona fide apprenticeship program registered with the U.S. Department of Labor, Employment and Training Administration, Office of Apprenticeship and Training, Employer and Labor Services (OATELS), or with a State Apprenticeship Agency recognized by OATELS, or if a person is employed in his or her first 90 days of probationary employment as an apprentice in such an apprenticeship program, who is not individually registered in the program, but who has been certified by OATELS or a State Apprenticeship Agency (where appropriate) to be eligible for probationary employment as an apprentice. The allowable ratio of apprentices to journeymen on the job site in any craft classification shall not be greater than the ratio permitted to the Contractor as to the entire work force under the registered program. Any worker listed on a payroll at an apprentice wage rate, who is not registered or otherwise employed as stated in this paragraph, shall be paid not less than the applicable wage rate on the wage determination for the classification of work actually performed. In addition, any apprentice performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate on the wage determination for the work actually performed. Where a contractor is performing construction on a project in a locality other than that in which its program is registered, the ratios and wage rates (expressed in percentages of the journeyman's hourly rate) specified in the Contractor's or subcontractor's registered program shall be observed. Every apprentice must be paid at not less than the rate specified in the registered program for the apprentice's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Apprentices shall be paid fringe benefits in accordance with the provisions of the apprenticeship program. If the apprenticeship program does not specify fringe benefits, apprentices must be paid the full amount of fringe benefits listed on the wage determination for the applicable classification. If the Administrator of the Wage and Hour Division determines that a different practice prevails for the applicable apprentice classification, fringes shall be paid in accordance with that determination. In the event OATELS, or a State Apprenticeship Agency recognized by OATELS, withdraws approval of an apprenticeship program, the Contractor will no longer be permitted to utilize apprentices at less than the applicable predetermined rate for the work performed until an acceptable program is approved.
- (2) Trainees. Except as provided in 29 CFR 5.16, trainees will not be permitted to work at less than the predetermined rate for the work performed unless they are employed pursuant to and individually registered in a program which has received prior approval, evidenced by formal certification by the U.S. Department of Labor, Employment and Training Administration. The ratio of trainees to journeymen on the job site shall not be greater than permitted under

the plan approved by the Employment and Training Administration. Every trainee must be paid at not less than the rate specified in the approved program for the trainee's level of progress, expressed as a percentage of the journeyman hourly rate specified in the applicable wage determination. Trainees shall be paid fringe benefits in accordance with the provisions of the trainee program. If the trainee program does not mention fringe benefits, trainees shall be paid the full amount of fringe benefits listed in the wage determination unless the Administrator of the Wage and Hour Division determines that there is an apprenticeship program associated with the corresponding journeyman wage rate in the wage determination which provides for less than full fringe benefits for apprentices. Any employee listed on the payroll at a trainee rate who is not registered and participating in a training plan approved by the Employment and Training Administration shall be paid not less than the applicable wage rate in the wage determination for the classification of work actually performed. In addition, any trainee performing work on the job site in excess of the ratio permitted under the registered program shall be paid not less than the applicable wage rate in the wage determination for the work actually performed. In the event the Employment and Training Administration withdraws approval of a training program, the Contractor will no longer be permitted to utilize trainees at less than the applicable predetermined rate for the work performed until an acceptable program is approved.

- (3) Equal employment opportunity. The utilization of apprentices, trainees, and journeymen under this clause shall be in conformity with the equal employment opportunity requirements of Executive Order 11246, as amended, and 29 CFR Part 30.
- (e) Compliance with Copeland Act requirements. The Contractor shall comply with the requirements of 29 CFR Part 3, which are hereby incorporated by reference in this contract.
- (f) Contract termination; debarment. A breach of this contract clause may be grounds for termination of the contract and for debarment as a Contractor and a subcontractor as provided in 29 CFR 5.12.
- (g) Compliance with Davis-Bacon and related Act requirements. All rulings and interpretations of the Davis-Bacon and related Acts contained in 29 CFR Parts 1, 3, and 5 are herein incorporated by reference in this contract.
- (h) Disputes concerning labor standards. Disputes arising out of the labor standards provisions of this clause shall not be subject to the general disputes clause of this contract. Such disputes shall be resolved in accordance with the procedures of the Department of Labor set forth in 29 CFR Parts 5, 6, and 7. Disputes within the meaning of this clause include disputes between the Contractor (or any of its subcontractors) and the PHA, HUD, the U.S. Department of Labor, or the employees or their representatives.
- (i) Certification of eligibility.
 - (1) By entering into this contract, the Contractor certifies that neither it (nor he or she) nor any person or firm who has an interest in the Contractor's firm is a person or firm ineligible to be awarded contracts by the United States Government by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).

- (2) No part of this contract shall be subcontracted to any person or firm ineligible for award of a United States Government contract by virtue of section 3(a) of the Davis-Bacon Act or 29 CFR 5.12(a)(1).
 - (3) The penalty for making false statements is prescribed in the U. S. Criminal Code, 18 U.S.C. 1001.
- (j) Contract Work Hours and Safety Standards Act. As used in this paragraph, the terms "laborers" and "mechanics" include watchmen and guards.
- (1) Overtime requirements. No contractor or subcontractor contracting for any part of the contract work which may require or involve the employment of laborers or mechanics, including watchmen and guards, shall require or permit any such laborer or mechanic in any workweek in which the individual is employed on such work to work in excess of 40 hours in such workweek unless such laborer or mechanic receives compensation at a rate not less than one and one-half times the basic rate of pay for all hours worked in excess of 40 hours in such workweek.
 - (2) Violation; liability for unpaid wages; liquidated damages. In the event of any violation of the provisions set forth in subparagraph (j)(1) of this clause, the Contractor and any subcontractor responsible therefor shall be liable for the unpaid wages. In addition, such Contractor and subcontractor shall be liable to the United States (in the case of work done under contract for the District of Columbia or a territory, to such District or to such territory), for liquidated damages. Such liquidated damages shall be computed with respect to each individual laborer or mechanic (including watchmen and guards) employed in violation of the provisions set forth in subparagraph (j)(1) of this clause, in the sum of \$10 for each calendar day on which such individual was required or permitted to work in excess of the standard workweek of 40 hours without payment of the overtime wages required by provisions set forth in subparagraph (j)(1) of this clause.
 - (3) Withholding for unpaid wages and liquidated damages. HUD or its designee shall upon its own action or upon written request of an authorized representative of the Department of Labor withhold or cause to be withheld, from any moneys payable on account of work performed by the Contractor or subcontractor under any such contract or any Federal contract with the same prime Contractor, or any other Federally-assisted contract subject to the Contract Work Hours and Safety Standards Act, which is held by the same prime Contractor, such sums as may be determined to be necessary to satisfy any liabilities of such Contractor or subcontractor for unpaid wages and liquidated damages as provided in the provisions set forth in subparagraph (j)(2) of this clause.
- (k) Subcontracts. The Contractor or subcontractor shall insert in any subcontracts all the provisions contained in this clause, and such other clauses as HUD or its designee may by appropriate instructions require, and also a clause requiring the subcontractors to include these provisions in any lower tier subcontracts. The prime Contractor shall be responsible for the compliance by any subcontractor or lower tier subcontractor with all these provisions.

47. Non-Federal Prevailing Wage Rates

- (a) Any prevailing wage rate (including basic hourly rate and any fringe benefits), determined under State or tribal law to be prevailing, with respect to any employee in any trade or position employed under the contract, is inapplicable to the contract and shall not be enforced against the Contractor or any subcontractor, with respect to employees engaged under the contract whenever such non-Federal prevailing wage rate exceeds:
 - (1) The applicable wage rate determined by the Secretary of Labor pursuant to the Davis-Bacon Act (40 U.S.C. 3141 et seq.) to be prevailing in the locality with respect to such trade;
- (b) An applicable apprentice wage rate based thereon specified in an apprenticeship program registered with the U.S. Department of Labor (DOL) or a DOL-recognized State Apprenticeship Agency; or
- (c) An applicable trainee wage rate based thereon specified in a DOL-certified trainee program.

48. Procurement of Recovered Materials.

- (a) In accordance with Section 6002 of the Solid Waste Disposal Act, as amended by the Resource Conservation and Recovery Act, the Contractor shall procure items designated in guidelines of the Environmental Protection Agency (EPA) at 40 CFR Part 247 that contain the highest percentage of recovered materials practicable, consistent with maintaining a satisfactory level of competition. The Contractor shall procure items designated in the EPA guidelines that contain the highest percentage of recovered materials practicable unless the Contractor determines that such items: (1) are not reasonably available in a reasonable period of time; (2) fail to meet reasonable performance standards, which shall be determined on the basis of the guidelines of the National Institute of Standards and Technology, if applicable to the item; or (3) are only available at an unreasonable price.
- (b) Paragraph (a) of this clause shall apply to items purchased under this contract where: (1) the Contractor purchases in excess of \$10,000 of the item under this contract; or (2) during the preceding Federal fiscal year, the Contractor: (i) purchased any amount of the items for use under a contract that was funded with Federal appropriations and was with a Federal agency or a State agency or agency of a political subdivision of a State; and (ii) purchased a total of in excess of \$10,000 of the item both under and outside that contract.

Superseded General Decision Number: LA20240038

State: Louisiana

Construction Type: Building

County: Jefferson County in Louisiana.

BUILDING CONSTRUCTION PROJECTS (does not include single family homes or apartments up to and including 4 stories).

Note: Contracts subject to the Davis-Bacon Act are generally required to pay at least the applicable minimum wage rate required under Executive Order 14026 or Executive Order 13658. Please note that these Executive Orders apply to covered contracts entered into by the federal government that are subject to the Davis-Bacon Act itself, but do not apply to contracts subject only to the Davis-Bacon Related Acts, including those set forth at 29 CFR 5.1(a)(1).

<p>If the contract is entered into on or after January 30, 2022, or the contract is renewed or extended (e.g., an option is exercised) on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 14026 generally applies to the contract. . The contractor must pay all covered workers at least \$17.75 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on the contract in 2025.
<p>If the contract was awarded on or between January 1, 2015 and January 29, 2022, and the contract is not renewed or extended on or after January 30, 2022:</p>	<ul style="list-style-type: none"> . Executive Order 13658 generally applies to the contract. . The contractor must pay all covered workers at least \$13.30 per hour (or the applicable wage rate listed on this wage determination, if it is higher) for all hours spent performing on that contract in 2025.

The applicable Executive Order minimum wage rate will be adjusted annually. If this contract is covered by one of the Executive Orders and a classification considered necessary for performance of work on the contract does not appear on this wage determination, the contractor must still submit a conformance request.

Additional information on contractor requirements and worker protections under the Executive Orders is available at <http://www.dol.gov/whd/govcontracts>.

Modification Number	Publication Date
0	01/03/2025
1	02/28/2025
2	03/14/2025
3	04/04/2025
4	06/20/2025
5	07/04/2025

ASBE0053-001 09/02/2024

	Rates	Fringes
ASBESTOS WORKER/HEAT & FROST INSULATOR.....	\$ 32.66	9.86

ELEC0130-011 12/02/2024

	Rates	Fringes
ELECTRICIAN (Including Communication Technician and Low Voltage Wiring; Excluding Installation of HVAC/Temperature Controls).....	\$ 35.00	16.03

ELEV0016-001 01/01/2025

	Rates	Fringes
ELEVATOR MECHANIC.....	\$ 51.11	38.435+a+b

a. PAID HOLIDAYS: New Year's Day, Memorial Day, Independence Day, Labor Day, Veterans' Day, Thanksgiving Day, the Friday after Thanksgiving Day and Christmas Day.

b. VACATION: Employer contributes 8% of basic hourly rate for 5 years or more of service; 6% of basic hourly rate for under 5 years of service as vacation pay credit.

ENGI0406-002 07/01/2014

	Rates	Fringes
POWER EQUIPMENT OPERATOR (Crane).....	\$ 23.46	8.35

CRANE PREMIUMS:

50-150 Tons	\$1.75
Over 150 Tons	\$2.25

IRON0623-021 07/01/2024

	Rates	Fringes
IRONWORKER (REINFORCING AND STRUCTURAL).....	\$ 34.75	13.86

PAIN1244-006 09/01/2024

	Rates	Fringes
GLAZIER.....	\$ 25.44	12.20

PAIN1244-011 12/01/2021

	Rates	Fringes
PAINTER (Spray).....	\$ 18.83	9.48

PLAS0567-001 08/01/2022

	Rates	Fringes
CEMENT MASON/CONCRETE FINISHER...	\$ 30.47	7.97

* PLUM0060-010 06/02/2025

	Rates	Fringes
PIPEFITTER (Including HVAC Unit Installation; Excluding HVAC Pipe Installation).....	\$ 33.30	14.98
PLUMBER (Including HVAC Pipe Installation; Excluding HVAC Unit Installation).....	\$ 34.87	17.79

* SULA2012-023 09/22/2014

	Rates	Fringes
BRICKLAYER.....	\$ 18.88	0.00
CARPENTER (Form Work Only).....	\$ 15.00 **	0.00
CARPENTER, Excludes Drywall Hanging and Metal Stud Installation, and Form Work.....	\$ 18.45	3.18
DRYWALL HANGER AND METAL STUD INSTALLER.....	\$ 18.35	4.33
ELECTRICIAN (HVAC/Temperature Controls Installation Only).....	\$ 28.93	6.31
LABORER: Common or General.....	\$ 14.68 **	0.00
LABORER: Mason Tender - Brick...	\$ 12.39 **	0.00
OPERATOR: Backhoe/Excavator/Trackhoe.....	\$ 21.03	0.00
PAINTER (BRUSH AND ROLLER), Excludes Drywall Finishing/Taping.....	\$ 18.95	8.91
PAINTER: Drywall Finishing/Taping.....	\$ 18.63	3.43
ROOFER.....	\$ 16.77 **	5.66

SHEET METAL WORKER (HVAC Duct Installation Only).....	\$ 25.54	10.30
SHEET METAL WORKER, Excludes HVAC Duct Installation.....	\$ 20.66	0.00
SPRINKLER FITTER (Fire Sprinklers).....	\$ 20.98	5.46
TILE SETTER.....	\$ 20.00	0.00
TRUCK DRIVER: Dump Truck.....	\$ 15.00 **	0.00

WELDERS - Receive rate prescribed for craft performing operation to which welding is incidental.

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** Workers in this classification may be entitled to a higher minimum wage under Executive Order 14026 (\$17.75) or 13658 (\$13.30). Please see the Note at the top of the wage determination for more information. Please also note that the minimum wage requirements of Executive Order 14026 are not currently being enforced as to any contract or subcontract to which the states of Texas, Louisiana, or Mississippi, including their agencies, are a party.

Note: Executive Order (EO) 13706, Establishing Paid Sick Leave for Federal Contractors applies to all contracts subject to the Davis-Bacon Act for which the contract is awarded (and any solicitation was issued) on or after January 1, 2017. If this contract is covered by the EO, the contractor must provide employees with 1 hour of paid sick leave for every 30 hours they work, up to 56 hours of paid sick leave each year. Employees must be permitted to use paid sick leave for their own illness, injury or other health-related needs, including preventive care; to assist a family member (or person who is like family to the employee) who is ill, injured, or has other health-related needs, including preventive care; or for reasons resulting from, or to assist a family member (or person who is like family to the employee) who is a victim of, domestic violence, sexual assault, or stalking. Additional information on contractor requirements and worker protections under the EO is available at <https://www.dol.gov/agencies/whd/government-contracts>.

Unlisted classifications needed for work not included within the scope of the classifications listed may be added after award only as provided in the labor standards contract clauses (29CFR 5.5 (a) (1) (iii)).

The body of each wage determination lists the classifications and wage rates that have been found to be prevailing for the type(s) of construction and geographic area covered by the wage determination. The classifications are listed in alphabetical order under rate identifiers indicating whether the particular

rate is a union rate (current union negotiated rate), a survey rate, a weighted union average rate, a state adopted rate, or a supplemental classification rate.

Union Rate Identifiers

A four-letter identifier beginning with characters other than "SU", "UAVG", ?SA?, or ?SC? denotes that a union rate was prevailing for that classification in the survey. Example: PLUM0198-005 07/01/2024. PLUM is an identifier of the union whose collectively bargained rate prevailed in the survey for this classification, which in this example would be Plumbers. 0198 indicates the local union number or district council number where applicable, i.e., Plumbers Local 0198. The next number, 005 in the example, is an internal number used in processing the wage determination. The date, 07/01/2024 in the example, is the effective date of the most current negotiated rate.

Union prevailing wage rates are updated to reflect all changes over time that are reported to WHD in the rates in the collective bargaining agreement (CBA) governing the classification.

Union Average Rate Identifiers

The UAVG identifier indicates that no single rate prevailed for those classifications, but that 100% of the data reported for the classifications reflected union rates. EXAMPLE: UAVG-OH-0010 01/01/2024. UAVG indicates that the rate is a weighted union average rate. OH indicates the State of Ohio. The next number, 0010 in the example, is an internal number used in producing the wage determination. The date, 01/01/2024 in the example, indicates the date the wage determination was updated to reflect the most current union average rate.

A UAVG rate will be updated once a year, usually in January, to reflect a weighted average of the current rates in the collective bargaining agreements on which the rate is based.

Survey Rate Identifiers

The "SU" identifier indicates that either a single non-union rate prevailed (as defined in 29 CFR 1.2) for this classification in the survey or that the rate was derived by computing a weighted average rate based on all the rates reported in the survey for that classification. As a weighted average rate includes all rates reported in the survey, it may include both union and non-union rates. Example: SUFL2022-007 6/27/2024. SU indicates the rate is a single non-union prevailing rate or a weighted average of survey data for that classification. FL indicates the State of Florida. 2022 is the year of the survey on which these classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 6/27/2024 in the example, indicates the survey completion date for the classifications and rates under that identifier.

?SU? wage rates typically remain in effect until a new survey is conducted. However, the Wage and Hour Division (WHD) has the discretion to update such rates under 29 CFR 1.6(c)(1).

State Adopted Rate Identifiers

The "SA" identifier indicates that the classifications and prevailing wage rates set by a state (or local) government were adopted under 29 C.F.R 1.3(g)-(h). Example: SAME2023-007 01/03/2024. SA reflects that the rates are state adopted. ME refers to the State of Maine. 2023 is the year during which the state completed the survey on which the listed classifications and rates are based. The next number, 007 in the example, is an internal number used in producing the wage determination. The date, 01/03/2024 in the example, reflects the date on which the classifications and rates under the ?SA? identifier took effect under state law in the state from which the rates were adopted.

WAGE DETERMINATION APPEALS PROCESS

1) Has there been an initial decision in the matter? This can be:

- a) a survey underlying a wage determination
- b) an existing published wage determination
- c) an initial WHD letter setting forth a position on a wage determination matter
- d) an initial conformance (additional classification and rate) determination

On survey related matters, initial contact, including requests for summaries of surveys, should be directed to the WHD Branch of Wage Surveys. Requests can be submitted via email to davisbaconinfo@dol.gov or by mail to:

Branch of Wage Surveys
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

Regarding any other wage determination matter such as conformance decisions, requests for initial decisions should be directed to the WHD Branch of Construction Wage Determinations. Requests can be submitted via email to BCWD-Office@dol.gov or by mail to:

Branch of Construction Wage Determinations
Wage and Hour Division
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

2) If an initial decision has been issued, then any interested party (those affected by the action) that disagrees with the decision can request review and reconsideration from the Wage and Hour Administrator (See 29 CFR Part 1.8 and 29 CFR Part 7). Requests for review and reconsideration can be submitted via email to dba.reconsideration@dol.gov or by mail to:

Wage and Hour Administrator

U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210

The request should be accompanied by a full statement of the interested party's position and any information (wage payment data, project description, area practice material, etc.) that the requestor considers relevant to the issue.

3) If the decision of the Administrator is not favorable, an interested party may appeal directly to the Administrative Review Board (formerly the Wage Appeals Board). Write to:

Administrative Review Board
U.S. Department of Labor
200 Constitution Avenue, N.W.
Washington, DC 20210.

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END OF GENERAL DECISION"

SECTION 01 11 00 – SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction and other CSI Division 0 documents, and Technical Specifications, apply to this Section.
 - 1. The Drawings consist of a Cover Sheet and seven (7) sets of drawings. Each of the seven sets of drawings corresponds to one of the seven (7) locations listed below and is labelled accordingly.
 - 2. The Project Manual (which includes the Technical Specifications) applies to work at all seven (7) locations listed below and to the Work in general.

1.2 WORK COVERED BY CONTRACT DOCUMENTS

- A. Work covered this Contract for seven new houses, each of which is to be constructed on a separate vacant Lot in unincorporated Jefferson Parish. Sitework shall also be performed at each of the Lots and at adjacent portions of public right-of-way. The locations of these seven houses are as indicated on the Project Manual cover page and below:
 - 1. 1440 & 1442 Mansfiels Avenue
 - 2. 1444 & 1446 Mansfield Avenue
 - 3. 1234 & 1236 Marshall Drive
 - 4. 6108 Fourth Avenue
 - 5. 6100A & 6100B Fifth Avenue
 - 6. 6126 Sixth Avenue
 - 7. 6204 Sixth Avenue (Note that work at this location is not Base Bid work; See Specification Section 01 22 00 – Unit Prices. Work at the other six locations shall be Base Bid work.)

B. Architect Identification:

- 1. The Documents, dated July 23, 2025, were prepared for the Project by:

Volume Zero, LLC
1034 Joliet Street
New Orleans, Louisiana 70118

C. Work of this contract as depicted on the drawings includes but is not necessarily limited to the following:

- 1. clearing and preparing site
- 2. structural fill sand
- 3. cast-in-place reinforced concrete

4. exterior painting
5. joint sealants
6. pipe and tube railing assemblies
7. termite treatment
8. testing laboratory services
9. grout
10. fire-stopping
11. rough carpentry, including preservative-treated wood
12. pre-engineered roof trusses
13. batt and blanket insulation
14. asphalt shingles (as a part of a Fortified™ roof assemblies)
15. self-adhering roof underlayment (as a part of a Fortified™ roof assemblies)
16. wall protection specialties, including wall corner guards
17. fiber cement siding and trim
18. PVC exterior trim
19. flashing and sheet metal
20. flexible flashing
21. roof specialties
22. interior and exterior door assemblies, including door hardware
23. attic access hatches, lockable and insulated
24. vinyl windows, impact-rated
25. gypsum board systems
26. wood trim, interior
27. interior painting
28. toilet and bath accessories
29. fire protection specialties
30. vinyl horizontal blinds
31. Plumbing work
32. HVAC work
33. Electrical work
34. communications
35. excavation
36. trenching
37. concrete paving
38. chain-link fence and gates
39. plantings, including sodding
40. sanitary sewer
41. water systems
42. address numerals
43. residential appliances
44. vinyl plank flooring
45. removal of existing dilapidated fencing
46. site grading and fill
47. removal of existing paving
48. paving in public right-of-way areas in compliance with Jefferson Parish regulations for sidewalks and driveway aprons.

This work is for the Owner, the Jefferson Parish Housing Services Development District (JPHSDD).

- D. The Contractor shall maintain a full-time superintendent until the punch list for the project is completed. The superintendent shall have at least ten (10) years continuous experience as a project superintendent in building construction.
- E. The Contractor shall maintain an in-house Project Manager until the punch list for the project is completed. The Project Manager shall have at least ten (10) years continuous experience as a project manager in building construction.
- F. The work of this contract is described in this Project Manual and in the drawings.
 - 1. As stated previously, the drawings consist of a cover sheet and seven sets of drawings. Each of the seven drawing sets corresponds to one of the seven new houses to be constructed, and each of the seven drawing sets is labeled with the property address(es); these addresses are indicated on the cover sheet of this Project Manual.

1.3 CONTRACT METHOD

- A. Construct the Work under a Lump Sum Construction Contract. A sample of the HUD form construction contract is included in this Project Manual.

1.4 SPECIFICATION FORMAT AND CONVENTIONS

- A. Specification Format: The Specifications are organized into Divisions and Sections using the 48-division format and CSI/CSC's "Master Format 6-Digit" numbering system.
 - 1. Section Identification: The Specifications use section numbers and titles to help cross-referencing in the Bid Documents. Sections in the Project Manual are in numeric sequence; however, the sequence is incomplete. Consult the table of contents at the beginning of the Project Manual to determine numbers and names of sections in the Bid Documents.
- B. Specification Content: The Specifications use certain conventions for the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations. These conventions are as follows:
 - 1. Abbreviated Language: Language used in the Specifications and other Bid Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be inferred as the sense requires. Singular words shall be interpreted as plural and plural words

shall be interpreted as singular where applicable as the context of the Bid Documents indicates.

2. Imperative mood and streamlined language are generally used in the Specifications. Requirements expressed in the imperative mood are to be performed by Contractor. Occasionally, the indicative or subjunctive mood may be used in the Section Text for clarity to describe responsibilities that must be fulfilled indirectly by Contractor or by others when so noted.
 - a) The words “shall,” “shall be,” or “shall comply with,” depending on the context, are implied where a colon (:) is used within a sentence or phrase.

1.5 FIRE SAFETY PRECAUTIONS

- A. At the end of each workday, combustible packaging and crating materials for building products and equipment to be installed shall be removed from the building(s).
- B. The necessary number of appropriate type of portable fire extinguishers per National Fire Protection Association (NFPA) Standard Nos. 10 and 241 shall be provided for all construction areas.
- C. As required by the Joint Commission on Accreditation of Healthcare Organizations, smoking shall be prohibited in or adjacent to all construction areas in the building. The Contractor shall have a smoking policy which permits smoking only in designated areas. These areas shall be provided with safe receptacles for smoking materials. Smoking shall be prohibited at or near or throughout demolition areas.
- D. Weekly fire hazard inspections shall be conducted by the Contractor once construction starts and until the building is totally completed. A written report shall be provided to the Contractor and Owner listing all hazards and corrective actions taken.
- E. A fire safety plan shall be prepared by the Contractor, prior to any construction in accordance with Section 01 33 00 - Submittals, detailing all fire safety measures which will be addressed during the construction. The plan shall be provided to the Contractor and Owner for review and comment. A monthly status report shall also be provided during the entire construction detailing the status of each measure.
- F. All temporary heating equipment shall be installed in accordance with requirements of applicable NFPA Standards and manufacturer's instructions.
- G. All flammable liquids shall be handled, stored and used in accordance with NFPA Standard No. 30.

- H. All temporary electrical wiring and equipment used for construction shall be installed and used in accordance with pertinent provisions of NFPA Standard No. 70.
- I. Maintain construction site to permit access of fire department vehicles as necessary. Clear building construction areas of unnecessary obstructions so that all portions are accessible for fire department apparatus and permit emergency egress of construction and other personnel.
- J. All construction activities not already covered above shall be in accordance with the latest edition of NFPA No. 241 Standard for Safeguarding Construction, Alteration, and Demolition Operations, in effect at time of contract award.

1.6 OPERATIONS AND STORAGE AREAS

- A. The Contractor shall confine all operations (including storage of materials) on the premises within the existing site area. The Contractor shall hold and save the Owner, its officers and agents, free and harmless from liability of any nature occasioned by the Contractor's performance.
- B. Temporary utilities may be erected by the Contractor and shall be erected with labor and materials furnished by the Contractor without expense to the Owner. The temporary utilities shall remain the property of the Contractor and shall be removed by the Contractor at its expense upon completion of the work.
- C. When materials are transported in prosecuting the work, vehicles shall not be loaded beyond the loading capacity recommended by the manufacturer of the vehicle or prescribed by a Federal, State, or Local law or regulation. When it is necessary to cross curbs or sidewalks, the Contractor shall protect them from damage. The Contractor shall repair or pay for the repair of any damaged curbs, sidewalks, parking lot, or roads.
- D. Portions of the site beyond areas in which construction operations are indicated are not to be disturbed.
- E. Working space and space available for storing materials on site shall be within the existing property lines.
- F. Workmen are subject to rules of the Owner applicable to their conduct.
- G. Do not dispose of any material on site, either by burial or burning.

1.7 SECURITY

- A. Contractor shall be responsible for all security measures to include but not limited to: fire, theft, vandalism, water damages, protection of public, etc.

- B. Obtain and pay for barriers, fences, signage, temporary enclosures or other measures required for necessary security of all buildings.
- C. Contractor shall be responsible for security as indicated until substantial completion.

1.8 SPECIAL WORK RESTRICTIONS

- A. (not used)

PART 2 - PRODUCTS (NOT USED)

PART 3 – EXECUTION (NOT USED)

END OF SECTION 01 11 00

SECTION 01 14 00 - WORK RESTRICTIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 USE OF PREMISES

- A. The Contractor shall not use any of the seven sites/Lots to perform work not directly related to this project.
- B. The Contractor shall not use any of the seven sites/Lots for storage not directly related to this project.
- C. The Contractor shall not use any of the seven sites/Lots as living quarters.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 14 00

SECTION 01 22 00 – UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.
- B. The Louisiana Uniform Public Work Bid Form UNIT PRICE FORM relates to this Section and shall take precedence in the case of any conflicts with this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Administrative and procedural requirements for unit prices.

1.3 DEFINITIONS

- A. Unit price is an amount proposed by a Bidder or Bidders, stated on the Bid Form as a price per unit of measurement for materials and/or services added to or deducted from the Contract Sum by appropriate modification, if estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES & MISCELLANEOUS

- A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, applicable taxes, overhead, profit, and bonds.
- B. Measurement and Payment: Refer to individual Specification Sections for work that requires establishment of unit prices. Payment for unit prices shall be by appropriate modification to the Agreement Between Owner and Contractor.
- C. List of Unit Prices: A list of unit prices is included at the end of this Section. Any Specification Sections referenced in the schedule contain requirements for materials described under each unit price.
- D. A project price cap may be imposed upon the Contractor. Contractor pricing shall not exceed the price cap even if Unit Pricing work is authorized. If the extent of authorized unit pricing work would cause the project price cap to be exceeded, it shall be the responsibility of the Contractor to inform the Architect and Owner in writing prior to performing the authorized Unit Pricing work.

- E. Bid amounts for unit price work shall include all work and costs incidental to the work described in this Specification Section.
- F. Unit Price work descriptions on the Bid Form are abbreviated descriptions and do not necessarily describe the full scope of Unit Price work items. The full descriptions of Unit Price work items are in this Specification Section, not in the Bid Form.
- G. All of the Unit Prices are additive unless noted otherwise.
- H. The Contractor shall perform unit price work as assigned/awarded by the Owner. Performance of such work is not optional for the Contractor if assigned/awarded.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 LIST OF UNIT PRICES

- A. Unit Price No. 1:
 - 1. Description: Provide all work indicated for 6204 Sixth Avenue. The extent of this work is indicated in the drawing set (one of seven drawing sets that are part of the Contract Documents) labelled “New House at 6204 Sixth Avenue” on the right side of each drawing sheet and in the Project Manual (The Project Manual applies to work at all seven sites). Award of this Unit Price work shall automatically extend the Contract Period (See Specification Section 00 72 00, Clause 25.) to two hundred seventy (270) calendar days from the written assignment/award of this unit price work; however, work at the other six sites shall be completed by the Contractor within the initial Contract Period of 270 calendar days. This Unit Price work is additive unit price work and should not be included in the Base Bid. (All work at the other six sites should be included in the Base Bid.)
 - 2. Unit of Measurement: All work at one of the seven sites of this Project (Specifically, all work at the 6204 Sixth Avenue site. “Site” means not only work on the Lot known as 6204 Sixth Avenue, but also any work indicated at the adjacent portion of the public right-of-way, Sixth Avenue.
- B. Should it be determined that other types of work are required, additional unit price items & costs may be used if agreed upon by the Owner and the Contractor. The creation of such additional unit price items/costs shall not require a Change Order, but must be written in official Project correspondence received by the Owner, Architect, and Contractor. Such correspondence shall be signed by authorized representatives of the Owner and the Contractor.

END OF SECTION 01 22 00

SECTION 01 31 13 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative provisions for coordinating construction operations on Project including, but not limited to, the following:
 - 1. General project coordination procedures.
 - 2. Administrative procedures.
 - 3. Conservation of energy, water and materials.
 - 4. Coordination Drawings.
 - 5. Administrative and supervisory personnel.
 - 6. Project meetings.
- B. Each contractor shall participate in coordination requirements. Certain areas of responsibility will be assigned to a specific contractor.
- C. Related Sections: The following Sections contain requirements that relate to this Section:
 - 1. Division 1 Section "Submittals" for preparing and submitting the Contractor's Construction Schedule.
 - 2. Division 1 Section "Execution Requirements" for procedures for coordinating general installation and field-engineering services, including establishment of benchmarks and control points.
 - 3. Division 1 Section "Closeout Procedures" for coordinating Contract closeout.

1.3 COORDINATION

- A. Coordination of Construction Operations: Coordinate construction operations included in various Sections of the Specifications to ensure efficient and orderly installation of each part of the Work. Coordinate construction operations, included in different Sections, that depend on each other for proper installation, connection, and operation.
- B. Coordination with Other Contractors: Each Contractor shall coordinate its construction operations with those of other Contractors and entities to ensure efficient and orderly installation of each part of the Work. Each Contractor shall

coordinate its operations with operations, included in different Sections, that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
 2. Coordinate installation of different components with other contractors to ensure maximum accessibility for required maintenance, service, and repair.
 3. Make adequate provisions to accommodate items scheduled for later installation.
- C. If necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and list of attendees at meetings.
1. Prepare similar memoranda for Owner and separate contractors if coordination of their Work is required.
- D. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities and activities of other contractors to avoid conflicts and to ensure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:
1. Preparation of Contractor's Construction Progress Schedule.
 2. Preparation of the Schedule of Amounts for Contract Payments.
 3. Installation and removal of temporary facilities and controls.
 4. Delivery and processing of submittals.
 5. Progress meetings.
 6. Preinstallation conferences.
 7. Project closeout activities.
- E. Conservation: Coordinate construction activities to ensure that operations are carried out with consideration given to conservation of energy, water, and materials.
1. Salvage materials and equipment involved in performance of, but not actually incorporated into, the Work.

1.4 SUBMITTALS

- A. Coordination Drawings: Prepare Coordination Drawings if limited space availability necessitates maximum utilization of space for efficient installation of different components or if coordination is required for installation of products and materials fabricated by separate entities.
1. Indicate relationship of components shown on separate Shop Drawings.

2. Indicate required installation sequences.
 3. As noted on the drawings; refer to Section "Basic Mechanical Materials and Methods" and Section "Basic Electrical Materials and Methods" for specific Coordination Drawing requirements for mechanical and electrical installations.
- B. Staff Names: Within 7 days of starting construction operations, submit a list of principal staff assignments, including superintendent, project manager, and other key personnel. Identify individuals and their duties and responsibilities; list addresses and telephone numbers, including mobile and office telephone numbers.

1.5 ADMINISTRATIVE AND SUPERVISORY PERSONNEL

- A. General: In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
1. Include special personnel required for coordination of operations with other contractors.

1.6 PROJECT MEETINGS

- A. General: Participate in meetings and conferences at a Project site or at the Owner's offices as scheduled by the Architect.
1. Attendees: The Architect shall inform participants and others involved, and individuals whose presence is required, of date and time of each meeting. The Architect shall notify Owner, Architect and other necessary parties of scheduled meeting dates and times.
 2. Agenda: The Architect shall prepare the meeting agenda and shall distribute the agenda to all invited attendees.
 3. Minutes: The Architect shall record significant discussions and agreements achieved and shall distribute the meeting minutes to everyone concerned, including Owner and Contractor, within 3 days of the meeting. Incorporate any comments received within 7 days of issuance of the initial minutes.
- B. Pre-Construction Conference: The Architect shall schedule a Pre-Construction conference before starting on-site construction operations, at a time convenient to Owner, Contractor, and other necessary parties but no later than seven (7) days after execution of the Agreement. Hold the conference at Project site or another convenient location. Conduct the meeting to review responsibilities and personnel assignments.
1. Attendees: Authorized representatives of Owner, Architect, and their consultants; Contractor and its superintendent, project manager and CPM scheduler; major subcontractors; manufacturers; suppliers; and other

concerned parties shall attend the conference. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

2. Agenda: Discuss items of significance that could affect progress, including the following:
 - a) Tentative construction schedule.
 - b) Phasing.
 - c) Critical work sequencing.
 - d) Designation of responsible personnel.
 - e) Procedures for processing field decisions and Change Orders.
 - f) Procedures for processing Applications for Payment.
 - g) Distribution of the Contract Documents.
 - h) Submittal procedures.
 - i) Preparation of Record Documents.
 - j) Use of the premises.
 - k) Responsibility for temporary facilities and controls.
 - l) Parking availability.
 - m) Office, work, and storage areas.
 - n) Equipment deliveries and priorities.
 - o) First aid.
 - p) Security.
 - q) Progress cleaning.
 - r) Working hours.
 - s) Fixed job site overhead cost itemized with documentation to support daily rates.

C. Preinstallation Conferences:

1. Conduct a roofing preinstallation conference at Project site as outlined in Section 07 31 13 – Asphalt Shingles and Section 07 71 00 – Roof Specialties
 - a) Record significant conference discussions, agreements, and disagreements.
 - b) Do not proceed with installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of the Work and reconvene the conference at earliest feasible date.
 - c) The Fortified™ roof inspector/certifier, the Architect, and relevant Contractor representatives shall be present.
2. Conduct a siding preinstallation conference at each house after weather-resistant barrier sheathing has been installed over the wall sheathing and after flexible self-adhering flashing has been installed at doors and

windows.

- D. Progress Meetings: The Architect shall conduct progress meetings at weekly intervals and record minutes of meeting. The meeting shall be on the same date and time each week.
1. Attendees: In addition to representatives of Owner and Architect, the Contractor and its superintendent and project manager, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings. All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.
 2. Agenda: Review and correct or approve minutes of previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to status of Project.
 - a) Contractor's Construction Progress Schedule: Review progress since the last meeting. Determine whether each activity is on time, ahead of schedule, or behind schedule, in relation to Contractor's Construction Progress Schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to ensure that current and subsequent activities will be completed within the Contract Time.
 - b) Review present and future needs of each entity present, including the following:
 - 1) Interface requirements.
 - 2) Sequence of operations.
 - 3) Status of submittals.
 - 4) Deliveries.
 - 5) Off-site fabrication.
 - 6) Access.
 - 7) Site utilization.
 - 8) Temporary facilities and controls.
 - 9) Work hours.
 - 10) Hazards and risks.
 - 11) Progress cleaning.
 - 12) Quality and work standards.
 - 13) Change Orders.
 - 14) Documentation of information for payment requests.
 3. Reporting: The Architect shall distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief

summary, in narrative form, of progress since the previous meeting and report.

4. Schedule Updating: The Contractor shall revise the Construction Progress Schedule monthly taking into account the minutes from each progress meeting and shall issue a revised schedule concurrently with each monthly request for payment.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 31 13

SECTION 01 33 00 – SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section. If there are any conflicts between this Specification Section and Specification Section 01 32 00, Specification Section 01 32 00 shall govern.

1.2 SUMMARY

- A. This section includes administrative and procedural requirements for submittals including but not necessarily limited to, the following:
 - 1. Procedures.
 - 2. Construction Progress Schedules.
 - 3. Schedule of Values.
 - 4. Proposed Subcontractors and Major Suppliers.
 - 5. Shop Drawings, Product Data and Samples.
 - 6. Products, Materials, and Equipment Data.
 - 7. Manufacturer's Instructions.
 - 8. Samples.
 - 9. Manufacturer's Certificates.
 - 10. Written Correspondence.

1.3 PROCEDURES

- A. Deliver submittals to Architect at address indicated on the drawings and the Project Manual or via e-mail in PDF format to michael@volumezero.com.
- B. Online submittal services such as ProCore (www.procore.com) may be used only if use of the online service is requested in writing by the Contractor and approved in writing by the Architect.
- C. Transmit each item under Architect accepted form. Identify Project, Owner, Architect, Contractor, subcontractor, major supplier; identify pertinent Drawing sheet and detail number, and Specification Section number, as appropriate. Identify any and all deviations from Contract Documents. Provide space for Contractor and architect review stamps. Stamp each item indicating review by Contractor.
- D. Comply with construction progress schedule for submittals under the provisions of this Section. Coordinate submittal of related items.
- E. After Architect reviews submittal, revise and resubmit as required, identifying changes made since previous submittal.

- F. Distribute copies of reviewed submittals to concerned persons. Instruct recipients to promptly report any inability to comply with provisions.

1.4 CONSTRUCTION PROGRESS SCHEDULES

- A. Construction Progress Schedule: Submit construction progress schedule in bar chart format.

1.5 SCHEDULE OF VALUES

- A. Submit typed schedule.
- B. Format: Table of Contents of these Specifications. Identify each line item with number and title of the major Specification Sections.
- C. Include in each line item a directly proportional amount of Contractor's overhead and profit; do not list overhead and profit as separate line items.
- D. Revise schedule to list change orders, for each application for payment.
- E. The Schedule of Values shall be reviewed and agreed upon by the Owner and Architect.

1.6 PROPOSED SUBCONTRACTORS AND SUPPLIERS

- A. The Contractor shall provide a listing of the proposed subcontractors and major suppliers to the Architect including name, address, telephone number and a contact person's name. The Contractor shall also provide documentation of qualifications if requested by the Architect.

1.7 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

- A. Submittals on 8-1/2" x 11", 8-1/2" x 14", 11" x 17", 24" x 36" paper size or larger shall be submitted in no less than six (6) copies. Receipt of less than the required numbers of copies will be cause for withholding the shop drawings, product data or samples from being reviewed by the Architect until receipt of the necessary copies. The Contractor's letter of transmittal for each submittal must conform to the typical Contractor's "Transmittal Letter". Each shop drawing, product data or sample submittal shall be listed separately on the transmittal and identified thereon. Failure to do this may cause rejection of the submittal. The Contractor shall forward separate transmittal letters for submitting each group of shop drawings common to the specifications section. The Architect shall return to the Contractor a transmittal letter identifying the shop drawing with the disposition noted thereon when the review is completed.

- 1. The Contractor shall review, approve and stamp each submittal prior to forwarding to the Architect. The stamp shall contain the

following information:

“NAME OF PROJECT: _____
ARCHITECT’S NAME AND PROJECT NO.: _____
REF: TECHNICAL SPECIFICATION SECTION NAME
AND NO.: _____
SHEET NO.: _____”

Contractor certifies he has approved drawings hereby submitted and to the best of his knowledge and understanding are accurate and are in compliance with the requirements of the project drawings and specifications, except as noted on comment sheet.

Contractor's approval of this document, does not waive or alter any contract responsibilities of subcontractor or supplier, nor does it approve of or relieve subcontractor etc. for any of his errors omission, etc. for which he remains fully responsible.

NAME OF CONTRACTOR: _____
SIGNATURE: _____
DATE: _____”

- B. Shop drawings, product data and samples reviewed by the Architect, returned to the Contractor will be stamped with the action noted as follows:
1. CONFORMS WITH CONCEPT or APPROVED
 2. REJECTED
 3. CONFORMS AS NOTED or APPROVED AS NOTED
 4. REVISE AND RESUBMIT
 5. SUBMIT SPECIFIED ITEM
- C. "Rejected", "Revise and Resubmit", and "Submit Specified Item" shall require new submittal; "Conforms with Concept", "Approved", "Conforms as Noted", and "Approved as Noted" need not be returned for further review if Architect notations are acceptable to the Contractor and Sub-contractors. In checking the shop drawings, product data and samples prior to submittal, the Contractor shall note corrections or comments on the drawings, including his approval stamp and date with signature. See Paragraph 1.7, A, 1. for compliance.

1.8 PRODUCTS, MATERIALS, AND EQUIPMENT DATA

- A. Mark each copy to identify applicable products, models, options, and other data; supplement manufacturer’s standard data to provide information unique to the Work.
- B. Submit the number of copies which Contractor requires, plus one copy which will be retained by Architect.

1.9 MANUFACTURER'S INSTRUCTIONS

- A. When required in individual Specification Section, submit manufacturer's printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for products, materials, and equipment data.
- B. The review process identified under paragraph 1.7, shall also apply to manufacturer's instructions.

1.10 SAMPLES

- A. Submit samples as indicated in other Specification Sections for specific products/materials. Submit samples as required for materials testing.
- B. The review process identified under paragraph 1.7, shall also apply to samples.

1.11 MANUFACTURER'S CERTIFICATES

- A. When required in individual specification section, submit manufacturer's certificates in quantities specified for products, materials, and equipment data.

1.12 TRANSMITTALS AND WRITTEN CORRESPONDENCE

- A. All transmittals and written correspondence by the Contractor to the Architect shall include the following as a minimum:
 - 1. Project Name.
 - 2. Date.
 - 3. Name of Contractor.
 - 4. Architect's name and Project #.
- B. Any correspondence received by the Architect lacking the information require by item "A" above may be returned to the Contractor by the Architect without any acknowledgement, review or response.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 33 00

SECTION 01 45 00 – QUALITY CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. General Quality Control.
- B. Workmanship.
- C. Manufacturer's Instructions.
- D. Manufacturer's Certificates.
- E. Manufacturers' Field Services.

1.3 QUALITY CONTROL, GENERAL

- A. Maintain quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.

1.4 WORKMANSHIP

- A. Comply with industry standards except when more restrictive tolerances or specified requirements indicate more rigid standards or more precise workmanship.
- B. Perform work by persons qualified to produce workmanship of specified quality.
- C. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, and racking.

1.5 MANUFACTURERS' INSTRUCTIONS AND RECOMMENDATIONS

- A. Comply with manufacturers' instructions & recommendations in full detail, including each step in sequence. Should instructions or recommendations conflict with Contract Documents, request clarification from Architect before proceeding.

1.6 MANUFACTURERS' CERTIFICATES

- A. When required by individual Specification Section, submit manufacturer's certificate, in duplicate, that products meet or exceed specified requirements.

1.7 MANUFACTURERS' FIELD SERVICES

- A. When specified in respective Specification Sections, require manufacturer to provide qualified personnel to observe field conditions, conditions of surface and installation, quality of workmanship, start-up equipment, test, adjust and balance of equipment as applicable, and to make appropriate recommendations.
- B. Representative shall submit written report to Architect listing observations and recommendations.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 45 00

GENERAL 01 45 23 – TESTING LABORATORY SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 DEFINITIONS AND EXPLANATIONS

- A. Testing Laboratory: An independent entity authorized to operate in the State of Louisiana engaged to perform specific inspections or tests of the work and to report and interpret the results of those inspections or tests.

1.3 SUMMARY

- A. This section includes the following:
 1. Testing and quality control procedures for the work covered by these Contract Documents.
 2. Selection and Payment: The Owner shall select the independent testing laboratory. The Contractor shall pay for the services of the independent testing laboratory. The firm shall be licensed in the State of Louisiana as a testing laboratory.
 3. Quality-control services include inspections, tests, and related actions, including reports performed by the Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Contractor.
 4. Cooperation: The Contractor shall cooperate with the testing laboratory and make available, without cost, samples of all materials to be tested in accordance with applicable standard specifications. Notify the laboratory sufficiently in advance of operations to allow for completion of initial tests and assignment of inspection personnel.
 5. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve the Contractor of responsibility for compliance with Contract Document requirements.
 6. Rejection of Material: The testing laboratory shall have the authority to reject all concrete delivered to the site which does not meet the specified slump requirements. The testing laboratory cannot alter or change the specifications, except as noted below. The laboratory shall immediately notify the Architect and the Contractor, or his authorized representatives, of any materials which are not in full conformance with the specifications. The Architect shall be informed of such notification.

7. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.
 - a) Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
 - b) Specified inspections, tests, and related actions do not limit the Contractor's quality-control procedures that facilitate compliance with Contract Document requirements.
 - c) Requirements for the Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

8. Related Sections: The following Sections contain requirements that relate to this Section:
 - a) Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
 - b) Division 1 Section "Submittals" specifies requirements for development of a schedule of required tests and inspections.

9. Contractor's Duties: The Contractor shall furnish the testing laboratory samples of all materials which he intends to use and which require testing. The Contractor shall furnish such nominal labor, materials, and facilities, including sheltered working space if required, as is necessary to obtain samples at the project site. The Contractor shall provide and maintain for the sole use of the testing laboratory adequate facilities for safe storage and proper curing of concrete test specimens on the project for the first 24 hours as required by ASTM C-31.
10. Scheduling: Advise testing laboratory and Architect sufficiently in advance of operations (Architect: 48 Hours; Laboratory: 24 Hours) to allow for assignment of inspection personnel.
11.
 - a) Less than 48 hours notice is acceptable for foundation pours where it is difficult to determine when excavation work will be completed and it is necessary to pour concrete immediately.

1.4 RESPONSIBILITIES

- A. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.
- B. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following:
1. Provide access to the Work.
 2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
 3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
 4. Provide facilities for storage and curing of test samples.
 5. Deliver samples to testing laboratories.
 6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
 7. Provide security and protection of samples and test equipment at the Project Site.
- C. Duties of the Testing Agency: The independent testing agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.
1. The agency shall notify the Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
 2. The agency is not authorized to release, revoke, alter, or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
 3. The agency shall not perform any duties of the Contractor.
- D. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
1. The Contractor is responsible for scheduling times for inspections, tests, taking samples, and similar activities.

1.5 SUBMITTALS

- A. The Contractor is responsible for this service, the independent testing laboratory shall submit a certified written report, in quad duplicate, of each inspection, test, or similar service through the Architect.
1. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:
 - a) Date of issue.
 - b) Name of Architect, Owner, and Contractor.
 - c) Project title and number.
 - d) Name, address, and telephone number of testing agency.
 - e) Dates and locations of samples and tests or inspections.
 - f) Names of individuals making the inspection or test.
 - g) Designation of the Work and test method.
 - h) Identification of product and Specification Section.
 - i) Complete inspection or test data.
 - j) Test results and an interpretation of test results.
 - k) Ambient conditions at the time of sample taking and testing.
 - l) Comments or professional opinion on whether inspected or tested Work complies with Contract Document requirements.
 - m) Name and signature of laboratory inspector.
 - n) Recommendations on retesting.

1.6 QUALITY ASSURANCE

- A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are prequalified as complying with the American Council of Independent Laboratories' "Recommended Requirements for Independent Laboratory Qualification" and that specialize in the types of inspections and tests to be performed.
1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the Project is located.

PART 2 - MATERIALS

2.1 TESTING METHODS AND SERVICES

- A. Tests and inspections shall be conducted in accordance with the requirements of these specifications or, if not herein specified, in accordance with the latest standards of ASTM or other recognized authorities.

PART 3 - EXECUTION

3.1 TESTING AND INSPECTION PROCEDURES

- A. Soil Testing: The testing laboratory shall obtain a sample of soil to be used as select fill or backfill and perform a sieve analysis test and a Moisture-Density Relationship analysis per ASTM D-698 to determine optimum moisture content and maximum density. If proposed select fill material has more than 10% passing a number 200 sieve, a complete soils classifications test shall be run per AASHTO M-145.
1. Select Fill: The testing laboratory shall obtain a sample of select fill under building structures, and shall analyze for in place dry density and moisture content per ASTM D-2922. Tests are to be taken no more than two days before placement of the next lift or slab. Fill must be retested if soil is rained on after testing and before the next lift, pavement of slab is placed. The testing laboratory shall perform one density test per ASTM D-1556 for every 20 ASTM D2922 tests for verification of nuclear tests by ASTM D-2922. Density tests shall be taken as follows:
 - a) Fill under building slabs and as a sub-base under paved areas; a ratio of one (1) test per 1,000 square feet of area or less per lift of select fill, but no fewer than three (3) tests.
 - b) Backfill of trenches; one (1) test per 50 linear feet (minimum or less) of trench per lift of select fill, but no fewer than two (2) tests.
 2. Bedding Material: The testing laboratory shall obtain a sample of bedding material and shall analyze for in-place dry density and moisture content per ASTM D2922. Density tests in accordance with ASTM D4253 maximum and ASTM D4254 minimum shall be taken as follows:
 - a) Bedding material in trenches: two (2) tests per 50 linear feet (minimum) of trench per lift. The testing laboratory shall also determine the bedding thickness.
- B. Concrete Testing Procedures: The testing laboratory shall comply with the requirements of ACI 301, Chapter 16. Mix design for all concrete mixes shall be submitted by the Contractor to the Architect and the testing laboratory. The testing laboratory shall review the mix design submittal for compliance with the specification requirements. The results of the review shall be sent by the testing laboratory to the Architect for approval or rejection before any concrete is poured. A representative of the testing laboratory at the project site will check the concrete as listed below. One (1) slump test and four (4) test cylinders shall be cast for each day's pour or 100 cubic yards or fraction thereof. Two (2) cylinders shall be tested and reported at seven (7) days and two (2) at twenty-eight (28) days, unless otherwise directed. The testing laboratory shall also measure floor

flatness and levelness prior to removal of forms in accordance with AC1 117 F-Number measuring system. Minimum F-Numbers shall be F_f.25 and F_l-20. Testing procedures shall be in accordance with the following:

3.2 SCHEDULE

- A. The following items require the testing laboratory to perform construction material testing and inspections.

ITEM	SPECIFICATION SECTION
Concrete Paving and Sidewalks	Section 32 13 13 –Cement Paving
Concrete	Section 03 30 00 – Cast-In-Place Concrete
Select Fill, Bedding Material	Section 31 23 23 – Backfilling

END OF SECTION 01 45 23

SECTION 01 55 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. electricity, lighting
 - 2. mobile phone and internet service with WI-FI
 - 3. water
 - 4. sanitary facilities
 - 5. barriers and enclosures
 - 6. protection of installed work
 - 7. cleaning during construction
 - 8. storage sheds
 - 9. removal of temporary facilities
 - 10. fire protection
 - 11. temporary security fencing

1.3 ELECTRICITY, LIGHTING

- A. The Contractor shall use a temporary power pole and panel board with meter to provide temporary electrical service to carry out the work for the duration of the project.

1.4 MOBILE PHONE AND INTERNET SERVICE

- A. Provide mobile phone service to project superintendent and all contractor supervisory employees. Pay all costs.
- B. Provide internet service via mobile phone service.

1.5 WATER

- A. Provide water hoses required for construction operations. Connect to existing hose bibbs.

1.6 SANITARY FACILITIES

- A. Provide and keep clean at all times required sanitary facilities and enclosures.

- B. Provide one (1) Port-O-Let at each Lot.
- C. Arrange to have Port-O-Let cleaned and serviced weekly.
- D. Provide toilet tissue holders and tissue.
- E. Remove Port-O-Lets upon substantial completion of work at each Lot.

1.7 BARRIERS AND ENCLOSURES

- A. Provide signage as may be required to prevent public entry to construction areas and to protect existing facilities that are to remain and adjacent properties from damage from construction operations.
- B. Provide barricades as required by governing authorities for public rights-of-way.

1.8 PROTECTION OF INSTALLED WORK

- A. Provide temporary protection for installed products. Control traffic in immediate areas to minimize damage.
- B. Prohibit traffic and storage on lawns, sidewalks, and landscaped areas.

1.9 CLEANING DURING CONSTRUCTION

- A. Broom sweep areas on a daily basis.
- B. Control accumulation of waste materials and rubbish utilizing small roll-off dumpsters; periodically dispose of off-site.

1.10 STORAGE SHEDS

- A. Provide as required, storage containers for tools, materials, and equipment: weather-tight, with adequate space for organized storage and access.
- B. Provide periodic cleaning and maintenance of storage container.
- C. Place storage container within temporary security fenced work area.

1.11 REMOVAL OF TEMPORARY FACILITIES

- A. Remove temporary materials, equipment, services, and construction prior to Substantial Completion.
- B. Clean and repair damage caused by installation or use of construction facilities and temporary controls. Restore the existing site area used during construction to original condition.

1.12 FIRE PROTECTION

- A. Provide hand-carried, portable, UL-rate, Class ABC, dry chemical extinguishers or a combination of extinguishers of NFPA recommend classes for the exposures.

1.13 TEMPORARY SECURITY FENCING

- A. Provide portable linked together chain-link fencing with non-destructive bases and gates around temporary facilities. Remove fencing where indicated. Remove fencing after completion of work and restore area to original condition.

PART 2 - PRODUCTS

- 2.1 Not Used

PART 3 - EXECUTION

- 3.1 Not Used

END OF SECTION 01 55 00

SECTION 01 57 19 - ENVIRONMENTAL PROTECTION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section specifies the control of environmental pollution and damage that the contractor is required to program for in consideration of air, water, and land, and includes management of visual aesthetics, noise, solid waste, radiant energy and radioactive materials, as well as other pollutants and resources encountered by or generated by the Contractor. Control measures specified are considered an obligation of the Contractor with the costs included within the various contract items of work.
- B. For the purpose of this specification, environmental pollution and damage is defined as the presence of chemical, physical, or biological elements or agents which adversely affect human health or welfare; unfavorably affect ecological balances of importance to human Life; effect other species of importance to man; or degrade the utility of the environment for aesthetic, cultural and historical purposes.
- C. Definitions of Pollutants:
 - 1. Sediment: Soil and other debris that has been eroded and transported by runoff water.
 - 2. Solid Waste: Rubbish, debris, garbage, and other discarded solid materials resulting from industrial, commercial, and agricultural operations and from community activities.
 - 3. Rubbish: A variety of combustible and noncombustible wastes such as paper, boxes, and glass and crockery, metal and lumber scrap, tin cans, and bones.
 - 4. Debris: includes both combustible and noncombustible wastes, such as leaves, and tree trimmings, ashes, and waste materials that result from construction or maintenance and repair work.
 - 5. Chemical Waste: Includes petroleum products, bituminous materials, salts, acids, alkalis, herbicides, pesticides, organic chemicals, and inorganic wastes.
 - 6. Sanitary wastes:
 - a) Sewage: That which is considered as domestic sanitary sewage, human and animal waste.

- b) Garbage: Refuse and scraps resulting from preparation, cooking, dispensing, and consumption of food.

1.3 QUALITY CONTROL

- A. Establish and maintain quality control for the environmental protection of all items set forth herein.
- B. Record on daily reports any problems in complying with laws, regulations and ordinances and corrective action taken.

1.4 SUBMITTALS

- A. In accordance with Section 01 33 00, SUBMITTALS, furnish the following:
 - 1. Environmental Protection Plan: After the contract is awarded, prior to the commencement of the work, the Contractor shall prepare a proposed Environmental Protection Plan. The Contractor shall prepare and submit to the Architect and Owner for approval, a written and/or graphic Environmental Protection Plan including, but not limited to, the following:
 - a) A list of Federal, State and Local Laws, regulations and permits concerning environmental protection, Pollution control, noise control and abatement that are applicable to the Contractor's proposed operations and the requirements imposed by those Laws, regulations imposed by those laws, regulations and permits.
 - b) Methods for Protection of features to be preserved within authorized work areas including a listing of methods to protect resources needing protection, i.e., trees, shrubs, vines, grasses and ground cover, landscape features, air and water quality, fish and wildlife, soil, historical, archeological and cultural resources.
 - c) Procedures to be implemented to provide the required environmental protection and to comply with the applicable Laws and regulations. Describe the procedures to be followed to correct pollution of the environment due to accident, natural causes or failure to follow the procedures set out in accordance with the environmental protection plan.
 - d) Permit or License and the Location of the solid waste disposal area.
 - e) Include as part of an Erosion Control Plan approved by the District Office of the U.S. Soil Conservation Service and the District Office of Housing and Urban Development, drawings showing locations of any proposed temporary excavations or embankments for haul roads, material storage areas, structures, sanitary facilities, and stockpiles of excess or spoil materials.
 - f) Environmental monitoring plans for the job site, including Land, water, air and noise.

- g) Work Area Plan showing the proposed activity in each Portion of the area and identifying the areas of Limited use or nonuse. Plan should include measures for marking the limits of use areas. This plan may be incorporated within the Erosion Control Plan.
- B. Approval of the Contractor's Environmental Protection Plan, will not relieve the Contractor of responsibility for adequate and continuing control of pollutants and other environmental protection measures.

1.5 PROTECTION OF ENVIRONMENTAL RESOURCES

- A. Protect environmental resources within the project boundaries and those affected outside the Limits of permanent work under this contract during the entire period of this contract. Confine activities to areas defined by the Specifications and drawings.
- B. Protection of Land Resources: Prior to construction, identify at land resources to be preserved within the work area. Do not remove, cut, deface, injure, or destroy land resources including trees, shrubs, vines, grasses, top soil, and land forms without permission from the Architect and Owner. Do not fasten attach ropes, cables, or guys to trees for anchorage unless specifically authorized, or where special emergency use is permitted.
 - 1. Work Area Limits: Prior to any construction, mark the areas that require work to be performed under this contract. Mark or fence isolated areas within the general work area which are to be saved and protected. Protect monuments, works of art, and markers before construction operation are to be saved and protected. Protect monuments, works of art, and markers before construction operations are to be conducted. Convey to all personnel the Purpose of marking and protecting all necessary objects.
 - 2. Protection of Landscape: Protect trees shrubs, vines, grasses, Land form and other landscape features shown on the drawings to be Preserved, by marking, fencing, or using any other approved techniques.
 - a) Box and Protect from damage existing trees and shrubs not to be removed from the construction site.
 - b) Immediately repair all damage to existing trees and shrubs by trimming, cleaning and painting with antiseptic tree paint.
 - c) Building materials or construction activity shall not occur closer to existing trees or shrubs than the farthest extension of their Limbs.
 - 3. Reduction of Exposure of Unprotected Erodible Soils: Plan and conduct earthwork to minimize the duration of exposure of unprotected solid, except where the constructed feature obscures borrow areas, quarries and waste material areas. Clear areas in reasonably sized increments only as needed to use the areas developed. Form earthwork to final grade as

- shown. Immediately protect Side slopes and back slopes upon completion of rough grading.
4. Temporary Protection of Disturbed Areas: Retard and control runoff from the construction site by constructing diversion ditches, benches, and berms to retard and divert runoff to protected drainage approved under paragraph 208 of the Clean Water Act.
 5. Erosion and Sedimentation Control Devices: Construct or install all temporary and permanent erosion and sedimentation control features on the Environmental Protection Plan. Maintain temporary erosion and sediment control measures such as berms, dikes, drains, sedimentation basins, grassing and mulching, until Permanent drainage and erosion control facilities are completed and operative.
 6. Manage borrow areas on the property to minimize erosion and to prevent sediment from entering nearby water courses or Lakes.
 7. Manage and control spoil areas on the property to limit spoil to areas on the Environmental Protection Plan and prevent erosion of soil or sediment from entering nearby water courses or Lakes.
 8. Protect adjacent areas from despoilment by temporary excavations and embankments.
 9. Handle and dispose of solid wastes in such a manner that will prevent contamination of the environment. Place solid wastes (excluding clearing debris) in containers that are emptied on a regular schedule. Transport all solid waste off the property and dispose of solid waste in compliance with Federal, state, and local disposal requirements.
 10. Store chemical waste in corrosion resistant containers, removed from the work areas and dispose of in accordance with Federal, State and local regulations.
 11. Handle discarded materials other than those which can be included in the solid waste category as directed by the Architect and Owner.
- C. Protection of Water Resources: Keep construction activities under surveillance, management and control to avoid pollution of surface and ground waters and sewer system. Management techniques shall be implemented to control water pollution by the List activities which are included in this contract.
1. Washing and Curing Water: Do not ALLOW waste water directly derived from construction activities to enter water areas. Collect and place these waste waters in retention ponds where suspended material can be settled out, until Pollutants are separated from the water, or the water evaporates.
 2. Control movement of materials and equipment at stream crossings during construction to prevent violation of water Pollution control standards of the Federal, State, or Local government.
 3. Monitoring of water areas effected by construction activities is the responsibility of the Contractor.
- D. Protection of Fish and Wildlife Resources: Keep construction activities under surveillance, management and control to minimize interference with, disturbance

of the damage to fish and wildlife. Prior to beginning construction operations, list species that require specific attention along with measures for their protection.

E. Protection of Air Resources: Keep construction activities under surveillance, management and control to minimize pollution of air resources. No burning will be permitted on the station. Keep activities, equipment, processes, and work operated or performed, in strict accordance with the State of Louisiana's Air Pollution Statues, Rules arid Regulations, and Federal emission and performance laws and standards. Maintain ambient air quality standards set by the Environmental Protection Agency, for those construction operations and activities specified.

1. Particulates: Dust particles, aerosols, and gaseous by products from all construction activities, processing and preparation of materials, such as from asphaltic batch plants, shall be controlled at all times, including weekends, holidays and hours when work is not in progress.
2. Particulates Control: Maintain at excavations, stockpiles, haul roads, permanent and temporary access roads, plant sites, spoil areas, borrow areas, and all other work areas within or outside the protect boundaries free from Particulates which would cause a hazard or a nuisance. Sprinklering, chemical treatment of an approved type, Light bituminous treatment baghouse, scrubbers, electrostatic precipitators or other methods are permissible to control particulates in the work area.
3. Hydrocarbons and Carbon Monoxide: Control monoxide emissions from equipment to Federal and State allowable limits.
4. Odors: Control odors of construction activities and prevent obnoxious odors from occurring.

F. Noise Control: Take every action possible to minimize noise. Perform noise producing work in less sensitive hours of the day or week as directed by the Architect and Owner. Maintain noise produced by the work at or below the decibel Levels and within the time periods specified.

1. Repetitive, high level impact noise will be permitted only between 7:00 a.m.- and 6:00 p.m unless otherwise permitted by Local ordinance or the ordinance or the Architect and Owner. Repetitive impact, noise on the property shall not exceed the following dB limitations:

<u>Time Duration of Impact Noise</u>	<u>Sound Level in Db</u>
More than 12 minutes in any hour	70
Less than 30 seconds of any hour	85
Less than three minutes of any hour	80
Less than 12 minutes of any hour	75

2. Provide equipment, sound-deadening devices, and take noise abatement measures that are necessary to comply with the requirements of this

contract, consisting of, but not limited to the following:

- a) Maximum permissible construction equipment noise levels at 50 feet (dBA):

<u>Earth Moving</u>		<u>Materials Handling</u>	
Front Loaders	75	Concrete Mixers	75
Backhoes	75	Concrete Pumps	75
Dozers	75	Cranes	75
Tractors	75	Derricks Impact	75
Scapers	80	Pile Drivers	95
Graders	75	Jack Hammers	75
Trucks	75	Rock Drills	80
Pavers, Stationary	80	Pneumatic Tools	80
Pumps	75	Saws	75
Generators	75	Vibrators	75
Compressors	75		

- b) Shields or other physical barriers to restrict the transmission of noise.
- c) Soundproof housings or enclosures for noise-producing machinery.
- d) Efficient silencers on air intakes for equipment.
- e) Efficient intake and exhaust mufflers on internal combustion engines that are maintained to have equipment Perform below noise Levels specified.
- f) Lining of hoppers and storage bins with sound deadening material.
- g) Conduct truck loading, unloading and hauling operations so that noise is kept to a minimum.

- 3. At least once every five successive working days while work is being performed, above 55 dBA noise level, measure sound level for noise exposure due to the construction. Measure noise exposure at the property line or 50 feet from the noise source, whichever is greater. Measure the sound levels on the “A” weighing network of a General Purpose Sound Level meter at slow response. To minimize the effect of reflective sound waves at buildings, measurements may be taken three to six feet in front of any building side. Submit the recorded information to the Architect and Owner noting any problems and the alternatives for mitigating actions.

- G. Restoration of Damaged Property: When or Where in the execution of the work under this contract, any direct or indirect damage injury is done to public or private property by or on account of any act, emission, neglect, or misconduct, the Contractor, at no additional cost to the Owner, shall restore the damaged property to a Condition equal to that existing before damage or injury was dam. Repair, rebuild or otherwise restore property as directed or make good such damage or injury in an acceptable Manner.

- H. Final Clean-up: On completion of project and after removal of all debris, rubbish and temporary construction, the construction area shall be left in a clean condition satisfactory to the Architect and Owner. Cleaning shall include off the station dispose of all items and materials not required to be salvaged, as well as all debris and rubbish resulting from demolition and new work operations.

END OF SECTION 01 57 19

SECTION 01 66 00 – PRODUCT STORAGE AND HANDLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Transportation and Handling.
 - 2. Storage and Protection.

1.3 PRODUCTS

- A. Products include material, equipment, and systems.
- B. Comply with Specifications and referenced standards as minimum requirements.
- C. Components required to be supplied in quantity within a Specification section shall be the same, and shall be interchangeable.

1.4 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; deliver in undamaged condition in manufacturer's unopened containers or packaging, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling or damage.
- C. Promptly inspect shipments to assure that products comply with requirements, quantities are correct, and products are undamaged.

1.5 STORAGE AND PROTECTION

- A. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation.

- C. Arrange storage to provide access for inspection. Periodically inspect to assure products are undamaged and are maintained under required conditions.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01 66 00

SECTION 01 71 00 - EXECUTION REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes general procedural requirements governing execution of the Work including, but not limited to, the following:

- 1. Construction layout.
- 2. Field Engineering and surveying.
- 3. General installation of products.
- 4. Coordination of Owner installed products.
- 5. Progress cleaning.
- 6. Starting and adjusting.
- 7. Protection of installed construction.
- 8. Correction of the Work.

- B. Related Sections include the following:

- 1. Division 1 Section "Project Management and Coordination" for procedures for coordinating field Architecting with other construction activities.
- 2. Division 1 Section "Submittals" for procedures for submitting general installation of products.
- 3. Division 1 Section "Cutting and Patching" for procedural requirements for cutting and patching necessary for the installation or performance of other components of the Work.
- 4. Division 1 Section "Closeout Procedures" for submitting final property survey with Project Record Documents, recording of Owner-accepted deviations from indicated lines and levels, and final cleaning.

1.3 SUBMITTALS

- A. Certificates: At the conclusion of construction, submit FEMA Elevation Certificate with photographs signed and sealed by a Professional Land Surveyor (PLS) certifying that location and elevation of improvements comply with requirements.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Existing Conditions: The existence and location of site improvements, utilities, and other construction indicated as existing are not guaranteed. Before beginning work, investigate and verify the existence and location of mechanical and electrical systems and other construction affecting the Work.
 - 1. Before construction, verify the location and points of connection of utility services.

- B. Existing Utilities: The existence and location of underground and other utilities and construction indicated as existing are not guaranteed. Before beginning sitework, investigate and verify the existence and location of underground utilities and other construction affecting the Work.
 - 1. Before construction, verify the location and invert elevation at points of connection of sanitary sewer, storm sewer, and water-service piping; and underground electrical services.
 - 2. Furnish location data for work related to Project that must be performed by public utilities serving Project site.

- C. Acceptance of Conditions: Examine substrates, areas, and conditions, with Installer or Applicator present where indicated, for compliance with requirements for installation tolerances and other conditions affecting performance. Record observations.
 - 1. Written Report: Where a written report listing conditions detrimental to performance of the Work is required by other Sections, include the following:
 - a. Description of the Work.
 - b. List of detrimental conditions, including substrates.
 - c. List of unacceptable installation tolerances.
 - d. Recommended corrections.
 - 2. Verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 3. Examine roughing-in for mechanical and electrical systems to verify actual locations of connections before equipment and fixture installation.
 - 4. Examine walls, floors, and roofs for suitable conditions where products and systems are to be installed.
 - 5. Proceed with installation only after unsatisfactory conditions have been corrected. Proceeding with the Work indicates acceptance of surfaces and

conditions.

3.2 PREPARATION

- A. Existing Utility Information: Furnish information to Architect that is necessary to adjust, move, or relocate existing utility structures, utility poles, lines, services, or other utility appurtenances located in or affected by construction. Coordinate with authorities having jurisdiction.
- B. Existing Utility Interruptions: Do not interrupt utilities serving facilities occupied by Owner or others unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:
 - 1. Notify Architect not less than two (2) days in advance of proposed utility interruptions.
 - 2. Do not proceed with utility interruptions without the Architect's written permission.
- C. Field Measurements: Take field measurements as required to fit the Work properly. Recheck measurements before installing each product. Where portions of the Work are indicated to fit to other construction, verify dimensions of other construction by field measurements before fabrication. Coordinate fabrication schedule with construction progress to avoid delaying the Work.
- D. Space Requirements: Verify space requirements and dimensions of items shown diagrammatically on Drawings.
- E. Review of Contract Documents and Field Conditions: Immediately on discovery of the need for clarification of the Contract Documents, submit a request for information to Architect. Include a detailed description of problem encountered, together with recommendations for changing the Contract Documents.

3.3 CONSTRUCTION LAYOUT

- A. Verification: Before proceeding to lay out the Work, verify layout information shown on Drawings, in relation to the property survey and existing benchmarks. If discrepancies are discovered, notify Architect promptly.
- B. General: Engage a Professional Land Surveyor (PLS) to lay out the Work using accepted surveying practices.
 - 1. Confirm existing benchmarks and control points to set lines and levels at each story of construction and elsewhere as needed to locate each element of Project.
 - 2. Establish dimensions within tolerances indicated. Do not scale Drawings to obtain required dimensions.

3. Inform installers of lines and levels to which they must comply.
 4. Check the location, level and plumb, of every major element as the Work progresses.
 5. Notify Architect when deviations from required lines and levels exceed allowable tolerances.
 6. Close site surveys with an error of closure equal to or less than the standard established by authorities having jurisdiction.
- C. Site Improvements: Locate and lay out site improvements, including pavements, grading, fill and topsoil placement, utility slopes, and invert elevations.
- D. Building Lines and Levels: Locate and lay out control lines and levels for structures, building foundations, column grids, and floor levels, including those required for mechanical and electrical work. Transfer survey markings and elevations for use with control lines and levels. Level foundations and piers from two or more locations.
- E. Record Log: Maintain a log of layout control work. Record deviations from required lines and levels. Include beginning and ending dates and times of surveys, weather conditions, name and duty of each survey party member, and types of instruments and tapes used. Make the log available for reference by Architect.

3.4 FIELD ENGINEERING

- A. Identification: The Survey included in the contract documents identifies existing benchmarks, control points, topography property dimensions, property corners, utilities and both above ground and below ground features.
- B. Reference Points: Locate existing permanent benchmarks, control points, and similar reference points before beginning the Work. Preserve and protect permanent benchmarks and control points during construction operations.
1. Do not change or relocate existing benchmarks or control points without prior written approval of Architect. Report lost or destroyed permanent benchmarks or control points promptly. Report the need to relocate permanent benchmarks or control points to Architect before proceeding.
 2. Replace lost or destroyed permanent benchmarks and control points promptly. Base replacements on the original survey control points.

3.5 INSTALLATION

- A. General: Locate the Work and components of the Work accurately, in correct alignment and elevation, as indicated.
1. Make vertical work plumb and make horizontal work level.

2. Where space is limited, install components to maximize space available for maintenance and ease of removal for replacement.
 3. Conceal pipes, ducts, and wiring in finished areas, unless otherwise indicated.
- B. Comply with manufacturer's written instructions and recommendations for installing products in applications indicated.
- C. Install products at the time and under conditions that will ensure the best possible results. Maintain conditions required for product performance until Substantial Completion.
- D. Conduct construction operations so no part of the Work is subjected to damaging operations or loading in excess of that expected during normal conditions of occupancy.
- E. Tools and Equipment: Do not use tools or equipment that produce harmful noise levels.
- F. Anchors and Fasteners: Provide anchors and fasteners as required to anchor each component securely in place, accurately located and aligned with other portions of the Work.
1. Mounting Heights: Where mounting heights are not indicated, mount components at heights directed by Architect.
 2. Allow for building movement, including thermal expansion and contraction.
- G. Joints: Make joints of uniform width. Where joint locations in exposed work are not indicated, arrange joints for the best visual effect. Fit exposed connections together to form hairline joints.
- H. Hazardous Materials: Use products, cleaners, and installation materials that are not considered hazardous.

3.6 OWNER INSTALLED PRODUCTS

- A. Site Access: Provide access to Project site for Owner's forces.
- B. Coordination: Coordinate construction and operations of the Work with work performed by Owner's forces.
1. Construction Schedule: Inform Owner of Contractor's Construction Progress Schedule for Owner's portion of the Work. Adjust construction schedule based on a mutually agreeable timetable. Notify Owner if changes to schedule are required due to differences in actual

construction progress.

C. Owner Installed Products:

1. The owner's forces shall provide and install the food service equipment as indicated on the drawings.

3.7 PROGRESS CLEANING

A. General: Clean Project site and work areas daily, including common areas. Coordinate progress cleaning for joint-use areas where more than one installer has worked. Enforce requirements strictly. Dispose of materials lawfully.

1. Comply with requirements in NFPA 241 for removal of combustible waste materials and debris.
2. Do not hold materials more than 7 days during normal weather or 3 days if the temperature is expected to rise above 80 deg F.
3. Containerize hazardous and unsanitary waste materials separately from other waste. Mark containers appropriately and dispose of legally, according to regulations.

B. Site: Maintain Project site free of waste materials and debris.

C. Work Areas: Clean areas where work is in progress to the level of cleanliness necessary for proper execution of the Work.

1. Remove liquid spills promptly.
2. Where dust would impair proper execution of the Work, broom-clean or vacuum the entire work area, as appropriate.

D. Installed Work: Keep installed work clean. Clean installed surfaces according to written instructions of manufacturer or fabricator of product installed, using only cleaning materials specifically recommended. If specific cleaning materials are not recommended, use cleaning materials that are not hazardous to health or property and that will not damage exposed surfaces.

E. Concealed Spaces: Remove debris from concealed spaces before enclosing the space.

F. Exposed Surfaces: Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

G. Cutting and Patching: Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar materials.

1. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its

original condition.

- H. Waste Disposal: Burying or burning waste materials on-site will not be permitted. Washing waste materials down sewers or into waterways will not be permitted.
- I. During handling and installation, clean and protect construction in progress and adjoining materials already in place. Apply protective covering where required to ensure protection from damage or deterioration at Substantial Completion.
- J. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to ensure operability without damaging effects.
- K. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period.

3.8 STARTING AND ADJUSTING

- A. Start equipment and operating components to confirm proper operation. Remove malfunctioning units, replace with new units, and retest.
- B. Adjust operating components for proper operation without binding. Adjust equipment for proper operation.
- C. Test each piece of equipment to verify proper operation. Test and adjust controls and safeties. Replace damaged and malfunctioning controls and equipment.
- D. Manufacturer's Field Service: If a factory-authorized service representative is required to inspect field-assembled components and equipment installation, comply with qualification requirements in Division 1 Section "Quality Requirements."

3.9 PROTECTION OF INSTALLED CONSTRUCTION

- A. Provide final protection and maintain conditions that ensure installed Work is without damage or deterioration at time of Substantial Completion.
- B. Comply with manufacturer's written instructions for temperature and relative humidity.

3.10 CORRECTION OF THE WORK

- A. Repair or remove and replace defective construction. Restore damaged substrates and finishes. Comply with requirements in Division 1 Section "Cutting and Patching."

1. Repairing includes replacing defective parts, refinishing damaged surfaces, touching up with matching materials, and properly adjusting operating equipment.
- B. Restore permanent facilities used during construction to their specified condition.
- C. Remove and replace damaged surfaces that are exposed to view if surfaces cannot be repaired without visible evidence of repair.
- D. Repair components that do not operate properly. Remove and replace operating components that cannot be repaired
- E. Remove and replace chipped, scratched, and broken glass or reflective surfaces.

END OF SECTION 01 71 00

SECTION 01 73 29 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes procedural requirements for cutting and patching.
- B. Related Sections include the following:
 - 1. Division 7 Section "Through-Penetration Firestop Systems" for patching fire-rated construction.
 - 2. Divisions 2 through 48 Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
 - a. Requirements in this Section apply to mechanical and electrical installations. Refer to Divisions 22, 23, 26, 27, 28, 31, 32 and Section 33 for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.3 DEFINITIONS

- A. Cutting: Removal of existing construction necessary to permit installation or performance of other Work.
- B. Patching: Fitting and repair work required to restore surfaces to original conditions after installation of other Work.

1.4 SUBMITTALS

- A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
 - 1. Extent: Describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
 - 2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
 - 3. Products: List products to be used and firms or entities that will perform the Work.
 - 4. Dates: Indicate when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Architect's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory work.

1.5 QUALITY ASSURANCE

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch the following operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety.
 1. Primary operational systems and equipment.
 2. Air or smoke barriers.
 3. Fire-protection systems.
 4. Control systems.
 5. Communication systems.
 6. Electrical wiring systems.
- C. Miscellaneous Elements: Do not cut and patch the following elements or related components in a manner that could change their load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.
 1. Water, moisture, or vapor barriers.
 2. Membranes and flashings.
 3. Equipment supports.
 4. Piping, ductwork, vessels, and equipment.
 5. Noise and vibration control elements and systems.
- D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.
- E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical

trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

1.6 WARRANTY

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. General: Comply with requirements specified in other Sections of these Specifications.
 - 1. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.
 - 2. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.
 - 1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.
 - 2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

- D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to minimize interruption of services to occupied areas.

3.3 PERFORMANCE

- A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.
 - 1. Cut existing construction to provide for installation of other components or performance of other construction, and subsequently patch as required to restore surfaces to their original condition.
- B. Cutting: Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.
 - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
 - 2. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
 - 3. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.
 - 4. Excavating and Backfilling: Comply with requirements in applicable Division 2 Sections where required by cutting and patching operations.
 - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
 - 6. Proceed with patching after construction operations requiring cutting are complete.
- C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.
 - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
 - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.

3. Floors and Walls: Where walls or partitions that are removed extend one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
4. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
5. Ceilings: Patch, repair, or rehang existing ceilings as necessary to provide an even-plane surface of uniform appearance.
6. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

END OF SECTION 01 73 29

SECTION 01 77 00 - CLOSEOUT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for contract closeout, including, but not limited to, the following:
 - 1. Permission to Occupy Project Mortgages.
 - 2. Final Completion.
 - 3. List of Incomplete Items (Punch List).
 - 4. Project Record Documents.
 - 5. Operation and Maintenance Manuals.
 - 6. Warranties.
 - 7. Final Cleaning.
- B. Provide separate close out procedures as indicated in this Section for each new house (or for each group of houses that are completed simultaneously).
- C. Related Sections include the following:
 - 1. Division 0 Section "Periodic Estimate for Partial Payment Procedures" for requirements for Applications for Payment for Substantial and Final Completion.
 - 2. Division 1 Section "Digital Image Documentation" for submitting Final Completion digital images and flash drive.
 - 3. Division 1 Section "Execution Requirements" for progress cleaning of Project site.
 - 4. Divisions 2 through 32 Sections for specific closeout and special cleaning requirements for products of those Sections.

1.3 SUBSTANTIAL COMPLETION

- A. Preliminary Procedures: Before requesting inspection for determining date of Permission to Occupy Project Mortgages, complete the following: List items below that are incomplete in request.
 - 1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.
 - 2. Advise Owner of pending insurance changeover requirements.

3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.
 4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
 5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and photographic negatives, damage or settlement surveys, property surveys, and similar final record information.
 6. Deliver tools, spare parts, extra materials, and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.
 7. Make final changeover of permanent locks and deliver keys to Owner. Advise Owner's personnel of changeover in security provisions.
 8. Complete startup testing of systems.
 9. Submit test/adjust/balance records.
 10. Terminate and remove temporary facilities from Project site, along with mockups, construction tools, and similar elements.
 11. Advise Owner of changeover in heat and other utilities.
 12. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.
 13. Complete final cleaning requirements, including touchup painting.
 14. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.
 15. Complete all punch list items in their entirety.
- B. Inspection: Submit a written request for inspection for Permission to Occupy Project Mortgage. On receipt of request, Architect and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the inspect and will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before the Permission to Occupy Project Mortgage will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.
 2. Results of completed inspection will form the basis of requirements for Final Completion.

1.4 FINAL COMPLETION

- A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:
1. Submit a final Application for Payment according to Division 0 Section "Payment Procedures."

2. Submit copy of Architect's inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance.
 3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.
 4. Submit pest-control final inspection report and warranty.
 5. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment, and systems. Submit demonstration and training video tapes.
- B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Owner will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.
1. Re-inspection: Request re-inspection when the Work identified in previous inspections as incomplete is completed or corrected.

1.5 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

- A. Preparation: Submit three copies of list. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.
1. Organize list of spaces in sequential order, starting with exterior areas first.
 2. Organize items applying to each space by major element, including categories for ceiling, individual walls, floors, equipment, and building systems.
 3. Include the following information at the top of each page:
 - a) Project name.
 - b) Building Name and Number.
 - c) Date.
 - d) Name of Architect.
 - e) Name of Contractor.
 - f) Page number.

1.6 PROJECT RECORD DOCUMENTS

- A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

- B. Record Drawings: Maintain and submit one black and white copy of the Contract Drawings and one copy of the approved Shop Drawings.
1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a) Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
 - b) Accurately record information in an understandable drawing technique.
 - c) Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - d) Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.
 2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
 3. Mark important additional information that was either shown schematically or omitted from original Drawings.
 4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.
 5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets; bind each set with durable paper cover sheets. Include identification on cover sheets.
- C. Record Specifications: Submit one copy of Project's Specifications, including addenda and contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Note related Change Orders, Record Drawings, and Product Data, where applicable.

- D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.
 - 1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 - 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 - 3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

- E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.7 OPERATION AND MAINTENANCE MANUALS

- A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:
 - 1. Operation Data:
 - a) Emergency instructions and procedures.
 - b) System, subsystem, and equipment descriptions, including operating standards.
 - c) Operating procedures, including startup, shutdown, seasonal, and weekend operations.
 - d) Description of controls and sequence of operations.
 - e) Piping diagrams.

 - 2. Maintenance Data:
 - a) Manufacturer's information, including list of spare parts.
 - b) Name, address, and telephone number of Installer or supplier.
 - c) Maintenance procedures.
 - d) Maintenance and service schedules for preventive and routine maintenance.
 - e) Maintenance record forms.
 - f) Sources of spare parts and maintenance materials.
 - g) Copies of maintenance service agreements.
 - h) Copies of warranties and bonds.

- B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders,

in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

1.8 WARRANTIES

- A. Organize warranty documents into an orderly sequence based on the table of contents of the Project Manual.
 - 1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.
 - 2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.
 - 3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.
- B. Provide additional copies of each warranty to include in operation and maintenance manuals.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Cleaning Agents: Use cleaning materials and agents recommended by manufacturer or fabricator of the surface to be cleaned. Do not use cleaning agents that are potentially hazardous to health or property or that might damage finished surfaces.

PART 3 - EXECUTION

3.1 FINAL CLEANING

- A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.
- B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.
 - 1. Complete the following cleaning operations before requesting inspection for Permission to Occupy Project Mortgages for the entire Project:

- a) Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
- b) Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
- c) Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
- d) Remove tools, construction equipment, machinery, and surplus material from Project site.
- e) Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
- f) Remove debris and surface dust from limited access spaces, including roofs, plenums, shafts, trenches, equipment vaults, manholes, attics, and similar spaces.
- g) Sweep concrete floors broom clean in unoccupied spaces.
- h) Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.
- i) Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.
- j) Remove labels that are not permanent.
- k) Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.
 - 1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.
- l) Wipe surfaces of mechanical and electrical equipment, and similar equipment. Remove excess lubrication, paint and mortar droppings, and other foreign substances.
 - 1) Replace parts subject to unusual operating conditions.
- m) Clean plumbing fixtures to a sanitary condition, free of stains, including stains resulting from water exposure.
- n) Replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.
- o) Clean ducts, blowers, and coils if units were operated without filters during construction.

- p) Clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent and mercury vapor fixtures to comply with requirements for new fixtures.
 - q) Leave Project clean and ready for occupancy.
- C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid Project of rodents, insects, and other pests. Prepare a report.
- D. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

END OF SECTION 01 77 00

SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:
 - 1. Operation and maintenance documentation directory.
 - 2. Emergency manuals.
 - 3. Operation manuals for systems, subsystems, and equipment.
 - 4. Maintenance manuals for the care and maintenance of products, materials, and finishes, systems and equipment.
- B. Related Sections include the following:
 - 1. Division 0 Section "Submittal Procedures" for submitting copies of submittals for operation and maintenance manuals.
 - 2. Division 01 Section "Closeout Procedures" for submitting operation and maintenance manuals.
 - 3. Division 01 Section "Project Record Documents" for preparing Record Drawings for operation and maintenance manuals.
 - 4. Divisions 02 through 48 Sections for specific operation and maintenance manual requirements for products in those Sections.
- C. Provide Operation and Maintenance data as described in this Section for each new house.

1.3 DEFINITIONS

- A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.
- B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

- A. Initial Submittal: Submit one (1) draft copy of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete

operation and maintenance directory. Architect will return one (1) copy of draft and mark whether general scope and content of manual are acceptable.

- B. Final Submittal: Submit one (1) copy of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.
 - 1. Correct or modify each manual to comply with Architect's comments. Submit three (3) copies of each corrected manual within 15 days of receipt of Architect's comments.

1.5 COORDINATION

- A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

- A. Organization: Include a section in the directory for each of the following:
 - 1. List of documents.
 - 2. List of systems.
 - 3. List of equipment.
 - 4. Table of contents.
- B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.
- C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.
- D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.
- E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with the same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

- A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:
1. Title page.
 2. Table of contents.
 3. Manual contents.
- B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:
1. Subject matter included in manual.
 2. Name and address of Project.
 3. Name and address of Owner.
 4. Date of submittal.
 5. Name, address, and telephone number of Contractor.
 6. Name and address of Architect.
 7. Cross-reference to related systems in other operation and maintenance manuals.
- C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.
1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of set.
- D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.
1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2-by-11-inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
 - a) If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
 - b) Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number

for multiple-volume sets.

2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic Software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2" x 11", 20 lb/sq. ft. white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
 - a) If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
 - b) If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

- A. Content: Organize manual into a separate section for each of the following:
 1. Type of emergency.
 2. Emergency instructions.
 3. Emergency procedures.
- B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:
 1. Fire.
 2. Flood.
 3. Gas leak.
 4. Water leak.
 5. Power failure.
 6. Water outage.
 7. System, subsystem, or equipment failure.
 8. Chemical release or spill.
- C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's

operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

- D. Emergency Procedures: Include the following, as applicable:
1. Instructions on stopping.
 2. Shutdown instructions for each type of emergency.
 3. Operating instructions for conditions outside normal operating limits.
 4. Required sequences for electric or electronic systems.
 5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

- A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

- B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

- C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.

6. Normal shutdown instructions.
 7. Seasonal and weekend operating instructions.
 8. Required sequences for electric or electronic systems.
 9. Special operating instructions and procedures.
- D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.
- E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

- A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.
- B. Source Information: List each product included in manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Product Information: Include the following, as applicable:
1. Product name and model number.
 2. Manufacturer's name.
 3. Color, pattern, and texture.
 4. Material and chemical composition.
 5. Reordering information for specially manufactured products.
- D. Maintenance Procedures: Include manufacturer's written recommendations and the following:
1. Inspection procedures.
 2. Types of cleaning agents to be used and methods of cleaning.
 3. List of cleaning agents and methods of cleaning detrimental to product.
 4. Schedule for routine cleaning and maintenance.
 5. Repair instructions.
- E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.
- F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

- A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.
- B. Source Information: List each system, subsystem, and piece of equipment included in the manual, identified by product name and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.
- C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:
 1. Standard printed maintenance instructions and bulletins.
 2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
 3. Identification and nomenclature of parts and components.
 4. List of items recommended to be stocked as spare parts.
- D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:
 1. Test and inspection instructions.
 2. Troubleshooting guide.
 3. Precautions against improper maintenance.
 4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
 5. Aligning, adjusting, and checking instructions.
 6. Demonstration and training videotape, if available.
- E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.
 1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
 2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

- F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.
- G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.
- H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.
 - 1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

- A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.
- B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.
- C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.
- D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.
 - 1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
 - 2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.
- E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.
- F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.
1. Do not use original Project Record Documents as part of Operation and Maintenance Manuals.
 2. Comply with requirements of newly prepared Record Drawings in Division 01 Section "Project Record Documents."
- G. Comply with Division 01 Section "Closeout Procedures" for the schedule for submitting operation and maintenance documentation.

END OF SECTION 01 78 23

SECTION 01 78 39 - PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes administrative and procedural requirements for Project Record Documents, including the following:
 - 1. Record Drawings.
 - 2. Record Specifications.
 - 3. Record Product Data.
- B. Related Sections include the following:
 - 1. Division 1 Section "Closeout Procedures" for general closeout procedures.
 - 2. Division 1 Section "Operation and Maintenance Data" for operation and maintenance manual requirements
 - 3. Divisions 2 through 16 Sections for specific requirements for Project Record Documents of products in those Sections.

1.3 SUBMITTALS

- A. Record Drawings: Comply with the following:
 - 1. Number of Copies: Submit one set of marked-up Record Prints to Architect.
- B. Record Specifications: Submit one (1) of Project's Specifications, including addenda and contract modifications to Architect.
- C. Record Product Data: Submit one (1) of each Product Data submittal.
 - 1. Where Record Product Data is required as part of operation and maintenance manuals, submit marked-up Product Data as an insert in the manual instead of submittal as Record Product Data.

PART 2 - PRODUCTS

2.1 RECORD DRAWINGS

- A. General: Do not use record drawings for construction purposes. Project record drawings from deterioration and loss. Provide access to record drawings for Architect's reference during normal working hours.
- B. Record Prints: Maintain one set of blue-line prints of the Contract Drawings and Shop Drawings.
 - 1. Preparation: Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, subcontractor, or similar entity, to prepare the marked-up Record Prints.
 - a) Give particular attention to information on concealed elements that would be difficult to identify or measure and record later.
 - b) Accurately record information in an understandable drawing technique.
 - 2. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
 - a) Content: Types of items requiring marking include, but are not limited to, the following:
 - 1) Dimensional changes to Drawings.
 - 2) Revisions to details shown on Drawings.
 - 3) Depths of foundations below first floor.
 - 4) Locations and depths of underground utilities.
 - 5) Revisions to routing of piping and conduits.
 - 6) Revisions to electrical circuitry.
 - 7) Actual equipment locations.
 - 8) Duct size and routing.
 - 9) Locations of concealed internal utilities.
 - 10) Changes made by Change Order or Construction Change Directive.
 - 11) Changes made following Architect's written orders.
 - 12) Details not on the original Contract Drawings.
 - 13) Field records for variable and concealed conditions.
 - 14) Record information on the Work that is shown only schematically.
 - 3. Mark the Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. If Shop Drawings are marked, show cross-reference on the Contract Drawings.

4. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.
5. Mark important additional information that was either shown schematically or omitted from original Drawings.
6. Note Construction Change Directive numbers, Option numbers, Change Order numbers, and similar identification, where applicable.

2.2 RECORD SPECIFICATIONS

- A. Preparation: Mark Specifications to indicate the actual product installation where installation varies from that indicated in Specifications, addenda, and contract modifications.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.
 3. Record the name of the manufacturer, supplier, Installer, and other information necessary to provide a record of selections made.
 4. For each principal product, indicate whether Record Product Data has been submitted in operation and maintenance manuals instead of submitted as Record Product Data.
 5. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.3 RECORD PRODUCT DATA

- A. Preparation: Mark Product Data to indicate the actual product installation where installation varies substantially from that indicated in Product Data submittal.
1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.
 2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.
 3. Note related Change Orders, Record Drawings, and Product Data where applicable.

2.4 MISCELLANEOUS RECORD SUBMITTALS

- A. Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

PART 3 - EXECUTION

3.1 RECORDING AND MAINTENANCE

- A. Recording: Maintain one copy of each submittal during the construction period for Project Record Document purposes. Post changes and modifications to Project Record Documents as they occur; do not wait until the end of Project.

- B. Maintenance of Record Documents and Samples: Store Record Documents and Samples in the field office apart from the Contract Documents used for construction. Do not use Project Record Documents for construction purposes. Maintain Record Documents in good order and in a clean, dry, legible condition, protected from deterioration and loss. Provide access to Project Record Documents for Architect's reference during normal working hours.

END OF SECTION 01 78 39

SECTION 03 30 00 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. The extent of concrete work is shown on the Drawings.
 - 2. Preparation of concrete subflooring to receive finish flooring materials.

1.3 QUALITY ASSURANCE

- A. Codes and Standards: Comply with the provisions of the following codes, specifications and standards, except where more stringent requirements are shown or specified:
 - 1. ACI 301 "Specifications for Structural Concrete for Buildings".
 - 2. ACI 318 "Building Code Requirements for Reinforced Concrete".
 - 3. ACI 304 "Recommended Practice for Measuring, Mixing, Transporting and Placing Concrete".
 - 4. Concrete Reinforcing Steel Institute, "Manual of Standard Practice".
 - 5. International Building Code (IBC), 2021 Edition.
 - 6. ACI 302 and ASTM F 710 "Standard Practice for preparing concrete floors to receive resilient flooring".
- B. Workmanship:
 - 1. The Contractor is responsible for correction of concrete work which does not conform to the specified requirements including dimensions, strength, tolerances and finishes.
- C. Concrete Testing Service:
 - 1. General: A Testing Laboratory shall be selected by the Owner and will be paid by the Contractor for the purpose of conducting all necessary tests on materials, design and control of the concrete mix, taking necessary concrete cylinders and slump tests during the course of the work, and making laboratory tests thereon to determine the compressive strength of the concrete in place. The testing laboratory shall have the authority to

reject all concrete delivered to the site which does not meet the specified slump requirements.

2. Cooperation Required: The Contractor shall cooperate with the Testing Laboratory and shall furnish the following:
 - a) All required material samples.
 - b) Identity of material sources and instructions to the suppliers to cooperate with the testing laboratory.
 - c) Notify the Architect 24 hours in advance of operations to allow for completion of initial tests and assignment of inspection personnel.
3. Materials and installed work may require testing and retesting, as directed by the Architect, at any time during the progress of the work. Allow free access to material stockpiles and facilities at all times. The retesting due to rejected materials and testing of installed work shall be done at the Contractor's expense.

D. Tests for Concrete Materials:

1. Test aggregates by method of sampling and testing of ASTM C33.
2. For portland cement, sample the cement and determine the properties by the methods of test of ASTM C150.
3. Submit written reports to the Architect, for each material sampled and tested, prior to the start of work. Provide the project identification name and number, date of report, name of contractor, name of concrete testing service, source of concrete aggregates, material manufacturer and brand name for manufactured materials, values specified in the referenced specification for each material, and test results. Indicate whether or not material is acceptable for intended use.

E. Notification of Architect:

1. Notify Architect a minimum of 24 hours prior to any concreting operation.

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Manufacturer's Data; Concrete Work: Submit manufacturer's product data with application and installation instructions for proprietary materials and items, including reinforcement and forming accessories, patching compounds, joint systems, and chemical floor hardeners.
- C. Shop Drawings; Concrete Reinforcement: Submit shop drawings for fabrication, bending, and placement of concrete reinforcement. Comply with the ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures" showing bar schedules, stirrup spacing, diagrams of bent bars, arrangement of

concrete reinforcement. Include special reinforcement required and openings through concrete structures.

- D. Samples; Concrete Work: Submit samples of materials as specified and as otherwise may be requested by the Architect, including names, sources and descriptions as required.
- E. Record Documents; Concrete Work:
 - 1. The Contractor's Superintendent in charge of concrete work shall mark using red ink on the Record Drawings, the time and date of placing of concrete in the different members. The Drawings shall be kept on file at the job site until final acceptance of the building, in accordance with the provisions of Section 01 71 00.

PART 2 - PRODUCTS

2.1 FORM MATERIALS

- A. Forms for Exposed Finish Concrete: Unless otherwise shown or specified, construct formwork for exposed concrete surfaces with plywood, metal, metal-framed plywood-faced or other acceptable panel-type materials, to provide continuous, straight, smooth, exposed surfaces. Furnish in largest practicable sizes to minimize number of joints and to conform to joint system shown on drawings. Provide form material with sufficient thickness and restraint to withstand pressure of newly-placed concrete without bow or deflection.
- B. Use plywood complying with U.S. Product Standard PS-1 "B-B (Concrete Form) Plywood", Class I, Exterior Grade or better, mill-oiled and edge-sealed, with each piece bearing legible trademark of an approved inspection agency.
- C. Form Coatings:
 - 1. Provide commercial formulation form-coating compounds that will not bond with, stain nor adversely affect concrete surfaces, and will not impair subsequent treatments of concrete surfaces to be cured with water or curing compound.
 - 2. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - a) Formfilm by A.C. Horn
 - b) Form-Saver by Sonneborn.

2.2 REINFORCING MATERIALS

- A. Reinforcing Bar:

1. Provide in accordance with ASTM A-615, Grade 60 (Billet Steel).
 2. All reinforcing steel shall also conform to ACI 318.
- B. Steel Wire: ASTM A82, plain, cold-drawn, steel.
- C. Welded Wire Fabric (WWF): ASTM A-185, welded steel wire fabric.
- D. Supports for Reinforcement: Provide supports for reinforcement including bolsters, chairs, spacers and other devices for spacing, supporting and fastening reinforcing bars and welded wire fabric in place. Use supports complying with ACI-315 recommendations, unless otherwise indicated.
1. Chairs shall be one of the following classes:
 - a) Pre-galvanized.
 - b) Plastic protected.
 - c) Stainless steel protected.
 - d) Ceramic.
 2. Concrete brick supports may be used in lieu of the above to support reinforcing bars.

2.3 CONCRETE MATERIALS

- A. Portland Cement: ASTM C150, Type I.
1. Use only one brand of cement throughout the project.
- B. Normal Weight Aggregates: ASTM C33, and as herein specified.
1. Provide aggregates from a single source for all exposed concrete.
 2. Fine Aggregate: Clean, sharp, natural sand free from loam, clay, lumps or other deleterious substances. Any fine aggregate deficient in No. 50 or No. 100 mesh material shall be compensated by the addition of limestone dust in sufficient quantity to produce an aggregate complying with requirements.
 3. Coarse Aggregate: Clean, uncoated, processed aggregate containing no clay, mud, loam or foreign matter, and as follows:
 - a) Washed gravel or crushed stone.
 - b) Size 67, of generally cubical shape, and reasonably free from thin, flat, or elongated pieces.
 - c) Water: Clean, fresh, drinkable, free from deleterious organic matter and in conformance with ASTM 318.
 - d) Admixtures: No admixtures or additives will be allowed without the prior written consent of the Architect.

2.4 RELATED MATERIALS

- A. Moisture Barrier: 10 mil thick clear polyethylene sheet.
- B. Membrane-Forming Curing Compound: Kure-N-Seal W, as manufactured by Sonneborn Building Products, Inc., or Horn W.B. 309 as manufactured by Tamms Industries, meeting the requirements of ASTM C309, Type 1.

2.5 PROPORTIONING AND DESIGN OF MIXES

- A. In advance of concrete operations, all materials proposed for use will be sampled and tested to determine their compliance with specifications.
- B. The concrete shall be designed in accordance with ACI 211.1 to produce the strength of each class of concrete in accordance with the requirements outlined below.
- C. Unless otherwise indicated on the Drawings or herein specified, concrete shall have a minimum ultimate compressive strength at 28 days of 3,000 p.s.i., using the maximum and minimum slumps and corresponding water/cement ratios recommended by ACI 211.1 for moderate exposure.

2.6 CONCRETE MIXING

- A. Mix materials for concrete in an acceptable drum type batch machine mixer. For mixers of one cubic yard, or smaller capacity, continue mixing at least 1-1/2 minutes, but not more than 5 minutes after all ingredients are in the mixer, before any part of the batch is released. For mixers of capacity larger than one cubic yard, increase the minimum 1-1/2 minutes of mixing time by 15 seconds for each additional cubic yard or fraction thereof.

PART 3 - EXECUTION

3.1 FORMS

- A. Design, erect, support, brace and maintain formwork to support vertical and lateral loads that might be applied until such loads can be supported by the concrete structure. Construct formwork so concrete members and structures are of correct size, shape, alignment, elevation and position.
- B. Design formwork to be readily removable without impact, shock or damage to cast-in-place concrete surfaces and adjacent materials.
- C. Construct forms complying with ACI 347, to sizes, shapes, lines, and dimensions shown, and to obtain accurate alignment, location, grades, level and plumb work in sinkages, keyways, recesses, chamfers, blocking, screeds, bulkheads, anchorages, and other features required in work. Use selected materials to obtain

required finishes. Solidly butt joints and provide back-up at joints to prevent leakage of cement paste.

- D. Fabricate forms for easy removal without hammering or prying against the concrete surfaces.
- E. Provide continuous chamfer at exposed corners and edges as shown, using wood, metal, PVC or rubber chamfer strips fabricated to produce uniform smooth lines and tight edge joints.
- F. Form Ties: Factory-fabricated, adjustable-length, removable or snapoff metal form ties, designed to prevent form deflection, and to prevent spalled concrete surfaces upon removal.
 - 1. Unless otherwise shown, provide ties such that the portion remaining within concrete, after removal, is at least one inch inside concrete.
 - 2. Unless otherwise shown, provide form ties which will not leave holes larger than 1-1/2" diameter in concrete surface.
- G. Cleaning and Tightening: Thoroughly clean forms and adjacent surfaces to receive concrete. Remove chips, wood, sawdust, dirt or other debris just before concrete is placed. Retighten forms after concrete placement if required to eliminate mortar leaks.
- H. Tolerances: Construct formwork so as to insure that the concrete surfaces will conform to the following tolerances:
 - 1. Variation from the plumb:
 - a) In the lines and surfaces of columns and beams
 - b) In 10 feet: 1/4 inch
 - c) 20 feet and over (max) 1 inch
 - 2. Variation from the level or from the grades indicated on Drawings:
 - a) In floors
 - 1) In 10 feet: 1/4 inch
 - 2) 20 feet maximum: 3/8 inch
 - 3) In 40 feet or more: 3/4 inch
 - b) For exposed conspicuous lines
 - 1) In any bay or
 - 2) 20 feet maximum: 1/4 inch
 - 3) In 40 feet or more: 1/2 inch

3. Variation of the surface from plane
 - a) Not greater than 1/4 inch from any straight line intended to lay entirely on the plane surface whose greatest dimension is a maximum of 10 feet.
4. Variation of the linear building lines from established position in plan and related positions of walls
 - a) 1/4 inch
5. Variation in the sizes and locations of floor openings
 - a) 1/4 inch
6. Variation in the thickness of slabs, beams and columns:
 - a) Minus: 1/4 inch
 - b) Plus: 1/2 inch
7. Footings:
 - a) Variation of dimensions in plan
 - 1) Minus: 1/2 inch
 - 2) Plus: 2 inches
 - 3) Misplacement or eccentricity
 - 4) 2 percent of the footing width in the direction of misplacement but not more than 2 inches.
 - b) Reduction in thickness
 - 1) Minus: 5% of specified thickness

3.2 PLACING REINFORCEMENT

- A. Comply with the specified codes and standards, and Concrete Reinforcing Steel Institute's recommended practice for "Placing Reinforcing Bars", for details and methods of reinforcement placement and supports, and as herein specified.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, and other materials which reduce or destroy bond with concrete.
- C. Accurately position, support and secure reinforcement against displacement by formwork, construction, or concrete placement operations. Locate and support reinforcing by metal chairs, runners, bolsters, spacers, and hangers, as required.

- D. Place reinforcement to obtain at least the minimum coverages for concrete protection.
 - 1. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement operations. Set wire ties so ends are directed into concrete, not toward exposed concrete surfaces.
 - 2. Do not place reinforcing bars more than 2" beyond the last leg of continuous bar support. Do not use supports as bases for runways for concrete conveying equipment and similar construction loads.
- E. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least two full mesh and tie with wire. Offset end laps in adjacent widths to prevent continuous laps in either direction.

3.3 JOINTS

- A. General: No construction joints other than those shown on the Drawings will be permitted unless prior approval is obtained from the Architect. Joints to existing concrete work shall be made as indicated on the Drawings. Where concrete is to be removed and replaced, care shall be taken so that existing reinforcing steel is not damaged or removed unless shown otherwise on the Drawings. Such steel shall be cut as directed in the field and shall be field bent into position to lap with new adjacent reinforcing steel. Concrete surfaces shall be treated with an approved adhesive before placing new concrete.
- B. Vapor Barrier: Lap joints a minimum of twelve inches.

3.4 INSTALLATION OF EMBEDDED ITEMS

- A. General: Coordinate the setting and building into the work of anchorage devices and other embedded items required for other work that is attached to, or supported by, cast-in-place concrete. Use setting drawings, diagrams, instructions and directions provided by suppliers of the items not being installed under other sections of the specification.
- B. Edge Forms and Screed Strips for Slabs: Set edge forms or bulkheads and intermediate screed strips for slabs to obtain the required elevations and contours in the finished slab surface. Provide and secure units sufficiently strong to support the types of screed strips by the use of strike-off templates or accepted compacting type screeds. The Contractor has the option to wet screed.

3.5 PREPARATION OF FORM SURFACES

- A. Coat the contact surfaces of forms with a form-coating compound before reinforcement is placed.

- B. Thin form-coating compounds only with thinning agent of type, and in amount, and under conditions of the form-coating compound manufacturer's directions. Do not allow excess form-coating material to accumulate in the forms or to come into contact with concrete surfaces against which fresh concrete will be placed. Apply in compliance with manufacturer's instructions.
- C. Coat steel forms with a non-staining, rust-preventative form oil or otherwise protect against rusting.

3.6 CONCRETE PLACEMENT

- A. **Preplacement Inspection:** Before placing concrete, inspect and complete the formwork installation, reinforcing steel, and items to be embedded or cast-in. Notify other crafts to permit the installation of their work; cooperate with other trades in setting such work, as required. Thoroughly wet wood forms immediately before placing concrete, as required where form coatings are not used.
- B. Coordinate the installation of joint materials and moisture barriers with placement of forms and reinforcing steel.
- C. **General:** Comply with ACI 304, and as herein specified.
 - 1. Deposit concrete continuously or in layers of such thickness that no concrete will be placed on concrete which has hardened sufficiently to cause the formation of seams or planes of weakness within the section. If a section cannot be placed continuously, provide construction joints as herein specified. Deposit concrete as nearly as practicable to its final location to avoid segregation due to rehandling or flowing.
- D. **Placing Concrete in Forms:** Deposit concrete in forms in horizontal layers not deeper than 24" and in a manner to avoid inclined construction joints. Where placement consists of several layers, place each layer while preceding layer is still plastic to avoid cold joints.
 - 1. Consolidate placed concrete by mechanical vibrating equipment supplemented by hand-spading, rodding or tamping. Use equipment and procedures for consolidation of concrete in accordance with the recommended practices of ACI 309, to suit the type of concrete and project conditions.
 - 2. Do not use vibrators to transport concrete inside of forms. Insert and withdraw vibrators vertically at uniformly spaced locations not farther than the visible effectiveness of the machine. Place vibrators to rapidly penetrate the placed layer of concrete and at least 6" into the preceding layer. Do not insert vibrators into lower layers of concrete that have begun to set. At each insertion limit the duration of vibration to the time necessary to consolidate the concrete and complete embedment of

reinforcement and other embedded items without causing segregation of the mix.

- E. Placing Concrete Slabs: Deposit and consolidate concrete slabs in a continuous operation, within the limits of construction joints, until the placing of a panel or section is completed.
 - 1. Consolidate concrete during placing operations so that concrete is thoroughly worked around reinforcement and other embedded items and into corners.
 - 2. Bring slab surfaces to the correct level with a straightedge and strike-off. Use bull floats or derbies to smooth the surface, leaving it free of humps or hollows. Do not sprinkle water on the plastic surface. Do not disturb the slab surfaces prior to beginning finishing operations.
 - 3. Maintain reinforcing in the proper position during concrete placement operations.

F. Cold Weather Concreting Placing.

- 1. Except as modified herein, cold weather concreting shall comply with ACI 306. The temperature of concrete at the time of mixing shall be not less than that shown in the following table for corresponding outdoor temperature (in shade) at the time of placement:

<u>Outdoor Temperature</u>	<u>Concrete Temperature</u>
Below 30° F	70° F
Between 30° F & 45° F	60° F
Above 45° F	45° F

- 2. When placed, heated concrete shall not be warmer than 80° F.
- 3. When freezing temperatures may be expected during the curing period, the concrete shall be maintained at a temperature of at least 50° F for 5 days or 70° F for 3 days after placement. Concrete and adjacent form surfaces shall be kept continuously moist. Sudden cooling of concrete shall not be permitted.

G. Hot Weather Concreting Placing.

- 1. Except as modified herein, hot weather concreting shall comply with ACI 305. At air temperatures of 90° F or above, concrete shall be kept as cool as possible during placement and curing. The temperature of the concrete when placed in the work shall not exceed 90° F.
- 2. Plastic shrinkage cracking, due to rapid evaporation of moisture, shall be prevented. Concrete shall not be placed when the evaporation rate (actual or anticipated) equals or exceeds 0.2 pound per square foot per hour, as

determined by Figure 2.1.5 in ACI 305.

3.7 FINISH OF FORMED SURFACES

- A. Smooth Form Finish: For formed concrete surfaces exposed-to-view, or that are to be covered with a coating material applied directly to the concrete or a covering material bonded to the concrete. This is the as-cast concrete surface as obtained with selected form facing material, arranged orderly and symmetrically with a minimum of seams. Repair and patch defective areas with all fins or other projections completely removed and smoothed.
- B. Related Unformed Surfaces: At tops of beams, horizontal offsets and similar unformed surfaces, strike-off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces, unless otherwise shown.

3.8 MONOLITHIC SLAB FINISHES

- A. Float Finish:
 - 1. Apply float finish to monolithic slab surfaces that are to receive trowel finish.
 - 2. After screeding and consolidating concrete slabs, do not work surface until ready for floating. Begin floating when surface water has disappeared or when concrete has stiffened sufficiently to permit operation of power-driven floats, or both. Consolidate surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Check and level surface plane to a tolerance not exceeding 1/4" in 10' when tested with a 10' straight edge. Cut down high spots and fill low spots. Uniformly slope surfaces to drains. Immediately after leveling, refloat surfaces to a uniform, smooth, granular texture.
- B. Trowel Finish:
 - 1. Apply trowel finish to monolithic slab surfaces that are to be exposed-to-view and slab surfaces that are to be covered with resilient flooring.
 - 2. After floating, begin first trowel finish operation using a power-driven trowel. Begin final troweling when surface produces a ringing sound as trowel is moved over surface. Consolidate concrete surface by final hand-troweling operation, free of trowel marks, uniform in texture and appearance, and with a surface plane tolerance not exceeding 1/4" in 10' when tested with a 10' straightedge. Grind smooth surface defects which would telegraph through applied floor covering system. Apply sealing compound to room slab surfaces as specified elsewhere.

3.9 CONCRETE CURING AND PROTECTION

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperature, and maintain without drying at a relatively constant temperature for a period of time necessary for hydration of cement and proper hardening.
- B. Curing Methods: Perform curing of concrete by membrane curing, as herein specified.
 - 1. Provide membrane curing to slabs as follows:
 - a) Apply membrane-forming curing compound to concrete surfaces as soon as final finishing operations are complete (within 2 hours). Apply uniformly in continuous operation by power-spray or roller in accordance with manufacturer's directions. Recoat areas which are subjected to heavy rainfall within 3 hours after initial application. Maintain continuity of coating and repair damage during curing period. Use cure and seal compound compatible with specified floor finish. Curing compound shall not be used where terrazzo finish or cementitious finish is to be applied. In these areas, use continuously wet burlap for seven day curing period.
 - 2. Curing Unformed Surfaces: Cure unformed surfaces, such as slabs, floor topping, and other flat surfaces by application of the appropriate curing compound.

3.10 SHORES AND SUPPORTS

- A. Comply with ACI 347 for shoring and reshoring in multi-story construction.
- B. Remove shores and reshore in planned sequence to avoid damage to partially cured concrete locate and provide adequate reshoring to safely support the work without excessive stress or deflection. Keep reshores in place as required in Paragraph A.

3.11 REMOVAL OF FORMS

- A. Formwork not supporting weight of concrete, such as sides of beams, floors, columns, and similar parts of the work, may be removed when concrete is sufficiently hard to not be damaged by form removal operations, and provided curing and protection operations are maintained.
- B. Formwork supporting weight of concrete, such as beam soffits, may be removed 7 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports. Determine potential compressive strength of in

place concrete by testing field-cured specimens representative of concrete location or concrete members.

- C. Form facing material may be removed 4 days after placement, only if shores and other vertical supports have been arranged to permit removal of form facing material without loosening or disturbing shores and supports.

3.12 RE-USE OF FORMS

- A. Clean and repair surfaces of forms to be re-used in the work. Split, frayed, delaminated or otherwise damaged form facing material will not be acceptable. Apply new form coating compound material to concrete contact form surfaces as specified for new formwork.
- B. When forms are extended for successive concrete placement, thoroughly clean surfaces, remove fins and laitance, and tighten forms to close joints. Align and secure joints to avoid offsets. Do not use "patched" forms for exposed concrete surfaces.

3.13 MISCELLANEOUS CONCRETE ITEMS

- A. Filling In: Fill-in holes and openings left in existing concrete structures due to demolition of existing concrete beams and columns.
- B. At all concrete surfaces to receive resilient flooring (including vinyl plank flooring), prepare concrete in accordance with ACI 302 and ASTM F 710 "Standard Practice for preparing concrete floors to receive resilient flooring".

3.14 CONCRETE SURFACE REPAIRS

- A. Patching Defective Areas: Repair and patch defective areas, voids, honeycombs and indentations with cement mortar immediately after removal of forms.
 - 1. Cut out and repair concrete where required for structural integrity as directed by the Architect.
 - 2. For exposed-to-view surfaces, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match color surrounding. Provide test areas at inconspicuous location to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.
- B. Repair of Unformed Surfaces: Test unformed surfaces, such as monolithic slabs, for smoothness and to verify surface plane to tolerances specified for each surface and finish. Correct low and high areas as herein specified. Test unformed surfaces sloped to drain for trueness of slope, in addition to smoothness, using a template having required slope.

1. Repair finished unformed surfaces that contain defects which adversely affect durability of concrete.
2. Correct high areas in unformed surfaces by grinding, after concrete has cured at least 14 days.
3. Correct low areas in unformed surfaces during, or immediately after completion of surface finishing operations by cutting out low areas and replacing with fresh concrete. Finish repaired areas to blend into adjacent concrete.
4. Repair defective areas, except random cracks and single holes not exceeding 1" diameter, by cutting out and replacing with fresh concrete. Remove defective areas to sound concrete with clean, square cuts and expose reinforcing steel with at least 3/4" clearance all around. Dampen concrete surfaces in contact with patching concrete, and brush with a neat cement grout coating or concrete bonding agent. Mix patching concrete of same materials to provide concrete of the same type and class as original concrete. Place, compact and finish to blend with adjacent finished concrete. Cure in the same manner as adjacent concrete.
5. Use epoxy-based mortar for structural repairs.

3.15 QUALITY CONTROL TESTING DURING CONSTRUCTION

- A. Sampling and testing for quality control during the placement of concrete may include the following, as directed by the Architect.
1. Sampling Fresh Concrete: ASTM C172, except modified for slump to comply with ASTM C94.
 2. Slump: ASTM C143; one test for each concrete load at point of discharge; and one test for each set of compressive strength test specimens.
 3. Air Content: ASTM C231 pressure for normal weight concrete; one for each set of compressive strength test specimens.
 4. Concrete Temperature: Test hourly when air temperature is 40 degrees F. and below, and when 80 degrees F. and above; and each time a set of compression test specimens is made.
 5. Compression Test Specimen: ASTM C31; one set of 4 standard cylinders for each compressive strength test, unless otherwise directed. Mold and store cylinders for laboratory cured test specimens except when field-cure test specimens are required.
 6. Compression Tests: Four concrete compression test cylinders shall be made each day when 25 cubic yards of concrete are placed. Two additional sets shall be made from each additional 100 cubic yards, or major fraction thereof, placed in any one day. Two cylinders of each set shall be tested at an age of 7 days, and two cylinders shall be tested at an age of 28 days. Compression tests will be evaluated in accordance with ACI 214 and 318.
 7. Test cylinders shall be made, cured, stored, and delivered to the laboratory in accordance with ASTM C31 and tested in accordance with ASTM C39.

8. Each set of compression test cylinders shall be marked or tagged with the date and time of day the cylinders were made, the location in the work where the concrete represented by the cylinders was placed, the delivery truck or batch number, the air content, and the slump.

- B. Test results will be reported in writing to the Architect and the Contractor on the same day that tests are made. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in the structure, design compressive strength at 28 days, concrete mix proportions and materials; compressive breaking strength and type of break for both 4-day tests and 28-day tests.

- C. Additional Tests: The testing service will make additional tests of in-place concrete when test results indicate the specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Architect. The testing service may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C42, or by other methods as directed. The Contractor shall pay for such tests conducted, and any other additional testing as may be required, when unacceptable concrete is verified.

- D. The delivery ticket that accompanies each load of concrete to the jobsite shall contain all of the information specified in ASTM C-94. The following additional information shall be provided on each delivery ticket:
 1. The reading of the revolution counter at the first addition of water, and
 2. The total amount of mixing water added. This includes free water on the aggregates, water and ice batched at the plant, and water added by the truck operator from the mixer tank.

3.16 ACCEPTANCE OF STRUCTURE

- A. Completed concrete work which meets all applicable requirements will be accepted without qualifications.

- B. Completed concrete work which fails to meet one or more requirements but which has been repaired to bring it into compliance will be accepted without qualification.

- C. Completed concrete work which fails to meet one or more requirements and which cannot be brought into compliance may be accepted or rejected as provided in these Specifications.

- D. If the concrete fails to meet the compressive strength requirements herein, additional curing may be required and modifications may be required in the concrete mix design for the remaining concrete work, at the expense of the Contractor.

- E. The strength of the structure in place will be considered potentially deficient if it fails to comply with any requirements which control the strength of the structure, including but not necessarily limited to the following conditions:
1. Low concrete strength as evaluated by procedures test.
 2. Reinforcing steel size, quantity, strength, position or arrangement at variance with the requirements of these Specifications or the Drawings.
 3. Concrete which differs from the required dimensions or location in such a manner as to reduce the strength.
 4. Curing less than that specified.
 5. Inadequate protection of concrete from extremes of temperature during early stages of hardening and strength development.
 6. Mechanical injury as defined in these Specifications, construction fires, accidents or premature removal of formwork likely to result in deficient strength.
 7. Poor workmanship likely to result in deficient strength.
- F. If a structural analysis by the Architect indicates the completed structure will be suitable for its intended use, it may be accepted.
- G. Concrete work judged inadequate by structural analysis or by results of a load test shall be reinforced with additional construction if so directed by the Architect, or shall be removed and replaced, at the Contractor's expense.

END OF SECTION 03 30 00

SECTION 05 52 13 - PIPE AND TUBE RAILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Steel pipe guardrail and handrail systems, hot-dip galvanized finish.
 - 2. Refer to schedule at the end of this section.

1.3 DEFINITIONS

- A. Definitions in ASTM E 985 for railing-related terms apply to this Section.

1.4 PERFORMANCE REQUIREMENTS

- A. General: In engineering guardrail and handrail systems to withstand structural loads indicated, determine allowable design working stresses of materials based on the following:
 - 1. Cold-Formed Structural Steel: AISI "Specification for the Design of Cold-Formed Steel Structural Members."
- B. Structural Performance of Guardrail and Handrails Systems: Engineer, fabricate, and install handrails and railing systems to comply with requirements of ASTM E 985 for structural performance based on the following:
 - 1. Testing performed according to ASTM E 894 and E 935.
 - 2. Structural computations.
- C. Structural Performance of Guardrail and Handrail Systems: Engineer, fabricate, and install handrails and railing systems to withstand the following structural loads without exceeding the allowable design working stress of the materials for handrails, railing systems, anchors, and connections. Apply each load to produce the maximum stress in each of the respective components comprising handrails and railing systems.
 - 1. Top Rail of Handrail Systems: Capable of withstanding the following loads applied as indicated:

- a) Concentrated load of 200 lb. per linear foot applied at any point and in any direction.
 - b) Uniform load of 50 lb. per linear foot applied horizontally and concurrently with uniform load of 100 lb. per linear foot applied vertically downward.
 - c) Concentrated and uniform loads above need not be assumed to act concurrently.
2. Handrails Not Serving as Top Rails: Capable of withstanding the following loads applied as indicated:
- a) Concentrated load of 200 lb. per linear foot applied at any point and in any direction.
 - b) Uniform load of 50 lb. per linear foot applied in any direction.
 - c) Concentrated and uniform loads above need not be assumed to act concurrently.
3. Infill Area of Guardrail and Handrail Systems: Capable of withstanding a horizontal concentrated load of 200 lb. applied to 1 sq. ft. at any point in the system including panels, intermediate rails, balusters, or other elements composing the infill area.
- a) Above load need not be assumed to act concurrently with loads on top rails of railing systems in determining stress on guard.
- D. Thermal Movements: Allow for thermal movement resulting from the following maximum change (range) in ambient temperature in engineering, fabricating, and installing handrails and railing systems to prevent buckling, opening of joints, overstressing of components and connections, and other detrimental effects. Base engineering calculation on actual surface temperatures of materials due to both solar heat gain and nighttime sky heat loss.
1. Temperature Change (Range): 120 deg F ambient 180 deg F material surfaces.
- E. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.
- 1.5 SUBMITTALS
- A. Product data for mechanically connected handrails and railing systems, each kind of fitting, grout, and anchoring cement under the provisions of Section 01 33 00.
 - B. Shop drawings showing fabrication and installation of handrails and railing systems including plans, elevations, sections, details of components, and attachments to other units of Work.

1.6 QUALITY ASSURANCE

- A. Single-Source Responsibility: Obtain guardrail and handrails systems of each type and material from a single manufacturer.

1.7 STORAGE

- A. Store guardrail and handrails systems inside a well-ventilated area, away from uncured concrete and masonry and protected from weather, moisture, soiling, abrasion, extreme temperatures, and humidity.

1.8 PROJECT CONDITIONS

- A. Field Measurements: Where guardrails and handrail systems are indicated to fit to other construction, check actual dimensions of other construction by accurate field measurements before fabrication; show recorded measurements on final shop drawings. Coordinate fabrication schedule with construction progress to avoid delaying the Work.

1.9 SEQUENCING AND SCHEDULING

- A. Sequence and coordinate installation of wall handrails as follows:
 - 1. Mount handrails only on steps or ramps. Do not support handrails temporarily by any means not satisfying structural performance requirements.

PART 2 - PRODUCTS

2.1 METAL MATERIALS

- A. General: Provide metals free from surface blemishes where exposed to view in the finished unit. Exposed-to-view surfaces exhibiting pitting, seam marks, roller marks, stains, discolorations, or other imperfections on finished units are not acceptable.
- B. Steel: Provide steel in the form indicated, complying with the following requirements:
 - 1. Steel Pipe: ASTM A 53; finish, type, and weight class as follows:
 - a) Hot-Dip Galvanized finish for interior and exterior installations and where indicated.
 - b) Prime painted finish for interior installation and where indicated.
 - c) Type F, or Type S, Grade A, standard weight (schedule 40), unless otherwise indicated, or another weight, type, and grade required by structural loads.

- C. Brackets, Flanges, and Anchors: Cast or formed metal of the same material and finish as supported rails, unless otherwise indicated.

2.2 WELDING MATERIALS, FASTENERS, AND ANCHORS

- A. Welding Electrodes and Filler Metal: Provide type and alloy of filler metal and electrodes as recommended by producer of metal to be welded and as required for color match, strength, and compatibility in fabricated items.

2.3 GROUT AND ANCHORING CEMENT

- A. Nonshrink, Nonmetallic Grout: Premixed, factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C 1107. Provide grout specifically recommended by manufacturer for interior and exterior applications.

2.4 MANUFACTURERS

- A. Subject to compliance with requirements, submit products produced by one of the following manufacturers:

- 1. Nonshrink, Nonmetallic Grouts:

- a) B-6 Construction Grout; W.R. Bonsal Co.
- b) Diamond-Crete Grout; Concrete Service Materials Co.
- c) Supreme; Cormix Construction Chemicals.
- d) Sure-grip High Performance Grout; Dayton Superior Corp.
- e) Euco N-S Grout; Euclid Chemical Co.
- f) Five Star Grout; Five Star Products.
- g) Vibropruf #11; Lambert Corp.
- h) Crystex; L & M Construction Chemicals, Inc.
- i) Masterflow 928 and 713; Master Builders Technologies, Inc.
- j) Sealtight 588 Grout; W.R. Meadows, Inc.
- k) SonogROUT 14; Sonneborn Building Products--ChemRex, Inc.
- l) Kemset; The Spray-Cure Company.

2.5 FABRICATION

- A. General: Fabricate guardrail and handrail systems to comply with requirements indicated for design, dimensions, details, finish, and member sizes, including wall thickness of hollow members, post spacings, and anchorage, but not less than those required to support structural loads.
- B. Assemble handrails and railing systems in the shop to the greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation. Use connections that maintain structural value of joined pieces. Clearly mark units for reassembly and coordinated installation.

- C. Form changes in direction of members as follows:
 - 1. As detailed.
 - 2. By mitering at elbow bends.
 - 3. By any method indicated above, applicable to change of direction involved.

- D. Form simple and compound curves by bending pipe in jigs to produce uniform curvature for each repetitive configuration required; maintain cylindrical cross section of pipe throughout entire bend without buckling, twisting, cracking, or otherwise deforming exposed surfaces of pipe.

- E. Welded Connections: Fabricate guardrails and handrail systems for connection of members by welding. For connections made during fabrication, weld corners and seams continuously to comply with the following:
 - 1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 - 2. Obtain fusion without undercut or overlap.
 - 3. Remove welding flux immediately.
 - 4. At tee and cross intersections, cope ends of intersecting members to fit contour of pipe or tube to which end is joined, and weld all around.
 - 5. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing and welded surface matches contours of adjoining surfaces.

- F. For railing posts set in concrete, provide core drilling, 6 inches long with inside dimensions not less than 3/4 inch greater than outside dimensions of post.

- G. Shear and punch metals cleanly and accurately. Remove burrs from exposed cut edges.

- H. Ease exposed edges to a radius of approximately 1/32 inch, unless otherwise indicated. Form bent-metal corners to the smallest radius possible without causing grain separation or otherwise impairing work.

- I. Cut, reinforce, drill, and tap components, as indicated, to receive finish hardware, screws, and similar items.

- J. Provide weepholes, or another means to evacuate entrapped water, in hollow sections of railing members that are exposed to exterior or to moisture from condensation or other sources.

- K. Fabricate joints that will be exposed to weather in a manner to exclude water.

2.6 STEEL FINISHES

- A. Galvanized Finish: Hot-dip galvanize items indicated to be galvanized to comply with applicable standard listed below:
 - 1. ASTM A 153 for galvanizing iron and steel hardware.
 - 2. ASTM A 123 for galvanizing iron and steel products made from rolled, pressed, and forged steel shapes, castings, plates, bars, and strips.
- B. Fill vent and drain holes that will be exposed in the finished Work, unless indicated to remain as weep holes, by plugging with zinc solder and filing off smooth.
- C. For galvanized handrails and railing systems, provide galvanized fittings, brackets, fasteners, sleeves, and other ferrous components.
- D. Primer FS TT-P-645, cold galvanized for field touch-up.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Coordinate setting drawings, diagrams, templates, instructions, and directions for installing anchorages, such as sleeves, concrete inserts, anchor bolts, and miscellaneous items having integral anchors, that are to be embedded in concrete as masonry construction. Coordinate delivery of such items to Project site.

3.2 INSTALLATION, GENERAL

- A. Fit exposed connections accurately together to form tight, hairline joints.
- B. Cutting, Fitting, and Placement: Perform cutting, drilling, and fitting required for installing handrails and railing systems. Set handrails and railing systems accurately in location, alignment, and elevation, measured from established lines and levels and free from rack.
 - 1. Do not weld, cut, or abrade surfaces of handrails and railing components that have been coated or finished after fabrication and are intended for field connection by mechanical or other means without further cutting or fitting.
 - 2. Set posts plumb within a tolerance of 1/4 inch in 12 feet.
 - 3. Align rails so that variations from level for horizontal members and from parallel with rake of steps and ramps for sloping members do not exceed 1/4 inch in 12 feet.
- C. Field Welding: Comply with the following requirements:

1. Use materials and methods that minimize distortion and develop strength and corrosion resistance of base metals.
 2. Obtain fusion without undercut or overlap.
 3. Remove welding flux immediately.
 4. At exposed connections, finish exposed welds and surfaces smooth and blended so that no roughness shows after finishing, and welded surface matches contours of adjoining surfaces.
- D. Adjust handrails and railing systems prior to anchoring to ensure matching alignment at abutting joints. Space posts at interval indicated but not less than that required by design loadings.

3.3 RAILING CONNECTIONS

- A. Welded Connections: Use fully welded joints for permanently connecting railing components by welding. Cope or butt components to provide 100 percent contact, or use fittings designed for this purpose.

3.4 ANCHORING POSTS

- A. Anchor posts in concrete by core-drilling holes not less than 6 inches deep and 3/4 inch greater than outside diameter of post. Clean holes of all loose material, insert posts, and fill annular space between post and concrete with the following anchoring material, mixed and placed to comply with anchoring material manufacturer's directions
1. Non-shrink, non-metallic grout.
- B. Cover anchorage joint with a round steel flange attached to post as follows:
1. Welded to post after placement of anchoring material.
- C. Leave anchorage joint exposed, wipe off surplus anchoring material, and leave 1/8-inch buildup, sloped away from post.

3.5 ADJUSTING AND CLEANING

- A. For Galvanized Surfaces: Clean field welds, bolted connections, and abraded areas and apply galvanizing repair paint to comply with ASTM A 780.

3.6 PROTECTION

- A. Protect finishes of handrails and railing systems from damage during construction period with temporary protective coverings approved by railing manufacturer. Remove protective coverings before the Permission to Occupy Project Mortgages.
- B. Restore finishes damaged during installation and construction period so that no evidence remains of correction work. Return items that cannot be refinished in

the field to the shop; make required alterations and refinish entire unit, or provide new units.

3.7 SCHEDULE

- A. The schedule is a list of principal items only. Refer to drawing details for items not specifically scheduled.
- B. Provide and install items listed in Schedule and shown on Drawings with anchorage and attachments necessary for installation as follows:
 - 1. New steel handrails assemblies at exterior stairs. New steel handrail assemblies shall have a painted finish.

END OF SECTION 05 52 13

SECTION 06 05 23 – WOOD, PLASTIC, AND COMPOSITE FASTENINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Pre-engineered metal connectors used to anchor wood structural member(s) to other wood structural member(s).
 - 2. Pre-engineered metal connectors used to anchor wood structural member(s) to concrete foundations.

1.3 REFERENCES

- A. ASTM A36 – Carbon Structural Steel
- B. ASTM A307 – Carbon Steel Bolts and Studs
- C. ASTM A653 – Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process
- D. ASTM A924/A 924M – General Requirements for Steel Sheet, Metallic-Coated by the Hot-Dip Process
- E. ASTM A1011 – Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability
- F. ASTM F1667 – Driven Fasteners: Nails, Spikes, and Staples
- G. ASTM D1761 – Standard Test Methods for Mechanical Fasteners in Wood
- H. ICBO AC13 – Acceptance Criteria for Joist Hangers and Similar Devices
- I. ICBO AC95 – Acceptance Criteria to Determine Bending Yield Moment for Nails
- J. ICBO AC120 – Acceptance Criteria for Wood Screws
- K. AISI – Cold-Formed Steel Specification, Latest Edition
- L. NDS – National Design Specification, Latest Edition

1.4 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Manufacturer's Data: Submit manufacturer's product data with application and installation instructions for items.
- C. DELIVERY, STORAGE, AND HANDLING
- D. Deliver products to job site in manufacturer's or distributor's packaging undamaged, complete with installation instructions.
- E. Protect and handle materials in accordance with manufacturer's recommendations to prevent damage or deterioration.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products produced by the following manufacturer or approved as equal by Architect:
 - 1. Pre-engineered metal connectors:
 - a. Simpson Strong-Tie Company, Inc.
2221 Country Lane
McKinney, TX 75069
Telephone: 800-999-5099

2.2 MATERIALS

- A. Steel:
 - 1. Sheet: ASTM A625, ASTM A653, ASTM A1011
 - 2. Fasteners: ASTM F1667
- B. Finishes:
 - 1. Hot-dipped galvanized: Z-MAX

2.3 FABRICATION

- A. Shop assembly to occur per the manufacturer's approved production drawings.
- B. Fabrication tolerances per manufacturer.
- C. Fabrication requiring welding shall be performed in accordance with the current American Welding Society's standards.

- D. The manufacturer's identification shall be stamped into the metal part and/or a label may be attached to the part with adhesive.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All nails shall be common and hot dipped galvanized.
- B. Do not overload by exceeding the manufacturer's catalog allowable load values.
- C. Provide fasteners at all fastener holes with fastener types as specified in the manufacturer's instructions.
- D. All specified fasteners shall be installed according to the manufacturer's instructions.
- E. Install all specified fasteners before loading the connection.
- F. Use proper safety equipment.
- G. Nail tools with hole-location mechanisms may be used to install connectors, provided the correct quantity and type of nails are properly installed in the nail holes.

3.2 FIELD QUALITY CONTROL

- A. Determine that the proper part is being used in the correct application and has been fabricated by the approved manufacturer by observation of the stamp into the metal part and/or the adhesive label on the product denoting part and manufacturer name.

END OF SECTION 06 05 23

SECTION 06 05 74 – PRESERVATIVE TREATED WOOD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Preservative treated wood dimension lumber, boards and plywood.
 - 2. Fasteners, hot-dipped galvanized finish.

1.3 REFERENCES

- A. ASTM A307 – Low carbon steel externally and internally threaded fasteners.
- B. ASTM A653 – Hot-dip galvanizing of steel.

1.4 SUBMITTALS

- A. Submit product data under the provisions of Section 01 33 00.
- B. Wood treatment data as follows, including chemical treatment manufacturer's instructions for handling, storing, installing, and finishing treated materials:
 - 1. For each type of preservative-treated wood product, include certification by treating plant stating type of preservative solution and pressure process used, net amount of preservative retained, and compliance with applicable standards.
- C. Material test reports from a qualified independent testing agency indicating and interpreting test results relative to compliance of fire-retardant-treated wood products with performance requirements indicated.
- D. Warranty of chemical treatment manufacturer for each type of treatment.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Keep materials under cover and dry. Protect from weather and contact with damp or wet surfaces. Stack lumber, plywood, and other panels. Provide for air circulation within and around stacks and under temporary coverings.

1. For lumber and plywood preservative pressure treated with waterborne chemicals, place spacers between each bundle to provide air circulation.

PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

- A. Lumber Standards: Comply with DOC PS 20, "American Softwood Lumber Standard," and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.
- B. Inspection Agencies: Inspection agencies, and the abbreviations used to reference them, include the following:
- C. Grade Stamps: Provide lumber with each piece factory marked with grade stamp of inspection agency evidencing compliance with grading rule requirements and identifying grading agency, grade, species, moisture content at time of surfacing, and mill.
 1. For exposed lumber, furnish pieces with grade stamps applied to ends or back of each piece.
- D. Where nominal sizes are indicated, provide actual sizes required by DOC PS 20 for moisture content specified. Where actual sizes are indicated, they are minimum dressed sizes for dry lumber.
 1. Provide dressed lumber, S4S, unless otherwise indicated.
 2. Provide dry lumber with 19 percent maximum moisture content at time of dressing for 2-inch nominal thickness or less, unless otherwise indicated.

2.2 PRESERVATIVE TREATED WOOD MATERIALS

- A. General: Where lumber or plywood is indicated as preservative treated or is specified to be treated, comply with applicable requirements of AWWA C2 (lumber) and AWWA C9 (plywood). Mark each treated item with the Quality Mark Requirements of an inspection agency approved by ALSC's Board of Review.
 1. Do not use chemicals containing chromium or arsenic.
 2. For exposed items indicated to receive stained finish, use chemical formulations that do not bleed through, contain colorants, or otherwise adversely affect finishes.
 3. Waterborne Preservative Chemicals: Acceptable to authorities having jurisdiction and the following:
 - a) Alkaline Copper Quat-Type C (ACQ-C).
 - b) Copper Azole – Type A (CBA-A).
 - c) Amine Copper Quat – Type D (ACQ-D).

- B. Pressure treat above ground items with preservatives to a minimum retention of 0.25 lb/cu. ft. After treatment, kiln-dry lumber to a maximum moisture content of 19 percent. Treat indicated items and the following:
 - 1. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
 - 2. All wall framing lumber and all wall sheathing panels shall be preservative-treated.
 - 3. All sub-fascia at roof eaves shall be preservative-treated.
- C. Lumber designated as “KDAT” shall be kiln-dried after preservative treatment.

2.3 DIMENSIONAL LUMBER

- A. General: Provide dimension lumber of grades indicated according to the ALSC National Grading Rule (NGR) provisions of the inspection agency indicated. Provide treated dimension lumber with 19 percent maximum moisture content and the following species and grade:
 - 1. Grade: No. 2.
 - 2. Species: Southern Yellow Pine (SYP).
 - 3. Preservative Treated.

2.4 BOARDS

- A. General: Where boards will be concealed by other work, provide treated boards with 19 percent maximum moisture content and of following species and grade:
 - 1. Grade: No. 2.
 - 2. Species: Southern Yellow Pine; (SYP).
 - 3. Preservative Treated.

2.5 PLYWOOD

- A. General: Provide treated plywood with 15 percent maximum moisture content and the following species and grade:
 - 1. Grade: Exterior Grade, B-C.
 - 2. Species: Southern Yellow Pine (SYP).
 - 3. Preservative Treated.

2.6 FASTENERS

- A. General: Provide fasteners of size and type indicated that comply with requirements specified in this Article for material and manufacture.

- B. Bolts: Steel bolts complying with ASTM A 307, Grade A (ASTM F 568, Property Class 4.6); with ASTM A 563 (ASTM A 563M) hex nuts and, where indicated, flat washers, hot-dip galvanized finish per ASTM A653. Hot-dip galvanize items to a minimum 1.25 oz./sq. ft. zinc coating.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

- A. Discard units of material with defects that impair quality of carpentry and that are too small to use with minimum number of joints or optimum joint arrangement.
- B. Set carpentry to required levels and lines, with members plumb, true to line, cut, and fitted.
- C. Fit carpentry to other construction; scribe and cope as required for accurate fit. Correlate location of furring, nailers, blocking, grounds, and similar supports to allow attachment of other construction.
- D. Securely attach carpentry work as indicated and according to applicable codes and recognized standards.

END OF SECTION 06 05 74

SECTION 06 10 00 – ROUGH CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section. See especially Section 06 05 74 – Preservative-Treated Wood. Also, see especially Section 06 05 23 – Wood, Plastic, and Composite Fastenings.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Roof sheathing, installed in compliance with Fortified™ Roof requirements.
 - 2. Wall sheathing, preservative-treated as per Section 06 05 74.
 - 3. Structural and non-structural framing, including preservative-treated wall framing and roof eave framing as per Section 06 05 74.
 - 4. Accessories.

1.3 REFERENCES

- A. ALSC - American Lumber Standards Committee: Softwood Lumber Standards.
- B. APA - American Plywood Association.
- C. NFPA - National Forest Products Association.
- D. SFPA - Southern Forest Products Association.
- E. Section 06 05 74 – Preservative Treated Wood.

1.4 QUALITY ASSURANCE

- A. Lumber Grading Agency: Certified by ALSC.
- B. Plywood Grading Agency: Certified by APA.

1.5 REGULATORY REQUIREMENTS

- A. Conform to the International Residential Code, 2021 edition for fastener size and type and spacing requirements for a design wind load of 130 mph.
- B. Conform to the requirements for Fortified™ roofs.

1.6 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00 and Section 06 05 74.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Store and protect products under provisions of Section 01 66 00.

PART 2 - PRODUCTS

2.1 LUMBER FRAMING MATERIALS

- A. Lumber Grading Rules: NFPA and SFPA.
- B. Lumber Grading Method: Visually Graded Lumber.
- C. Framing: SYP species, Structural No. 2 grade (knot free), 19 percent maximum moisture content. See Section 06 05 74 about which members shall be preservative-treated.

2.2 PLYWOOD MATERIALS

- A. Roof Sheathing: APA Exposure 1, Exterior Grade CDX; un-sanded, 5/8" thick. Roof sheathing and roof sheathing fasteners shall meet the requirements for Fortified™ roof assemblies.
- B. Wall Sheathing: APA Exposure 1, Exterior Grade CDX, 1/2" thick, un-sanded and preservative treated in accordance with Section 06 05 74.

2.3 ACCESSORIES

- A. Fasteners: Finish, size and type to suit condition to exceed the requirements of the International Residential Code (IRC), 2021 edition.
 - 1. Roof sheathing fasteners shall meet the requirements of Fortified™ roof assemblies.
- B. Hurricane Straps: Galvanized steel, specified by a Registered Licensed Professional Engineer or Architect at locations as shown on the Drawings and as required to conform to International Residential Code (IRC), 2021 edition. See Section 06 05 23.
- C. Anchor Bolts: See Section 06 05 23.
- D. H-Clips: Galvanized steel H-clips to connect plywood roof sheathing between 16-inch o.c. sloped wood joists at the roof. See Section 06 05 23.

PART 3 - EXECUTION

3.1 FRAMING

- A. Erect wood framing members level and plumb.
- B. Place horizontal members laid flat, crown side up.
- C. Construct framing members full length without splices.
- D. Double members at openings over one square foot in area. Space short studs over and under opening to stud spacing.
- E. Bridge roof rafters in excess of 8 feet long at third points. Fit solid blocking at ends of members.
- F. Add bracing as required to produce a stable structure.

3.2 ROOF PLYWOOD SHEATHING

- A. Secure roof sheathing with the long dimension of the sheathing panels perpendicular to rafter members and with panel ends staggered a minimum of 32 inches. Secure panel edges over firm bearing. Provide an H-clips at each plywood roof sheathing joint between wood rafters. Each H-clip shall be located halfway between adjacent rafters.
- B. Secure roof sheathing with 3-inch long ring shank galvanized fasteners at four (4) inches maximum o.c. at all rafters and at perimeters of all roof planes.

END OF SECTION 06 10 00

SECTION 07 21 16 – BATT AND BLANKET INSULATION

PART 1 - GENERAL

1.1 SUMMARY OF WORK

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY OF WORK

- A. This section included the following:
 - 1. Thermal insulation in exterior walls.
 - 2. Thermal insulation in attic floors.
 - 3. Acoustic insulation blanket in demising walls between living units.
 - 4. Continuous Sill Gasket located between the top of the concrete slab and the preservative tread wood sill at the exterior wood stud walls.

1.3 REFERENCE STANDARDS

- A. ASTM International (ASTM).
 - 1. ASTM C167 - Standard Test Method for Thickness and Density of Blanket or Batt Thermal Insulations.
 - 2. 5ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus.
 - 3. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing.
 - 4. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials.
 - 5. ASTM E136 - Standard Test Method for Behavior of Materials in a Vertical Tube Furnace at 750 degrees C.

1.4 ADMINISTRATIVE REQUIREMENTS

- A. Co-ordination: Co-ordinate work of this Section with roofing or deck work and with work of other trades for proper time and sequence to avoid construction delays.

1.5 SUBMITTALS

- A. Submit under provisions of Section 01 33 00 - Submittal Procedures.
- B. Product Data: Submit product data including manufacturer's literature for insulation materials and accessories, indicating compliance with specified requirements and material characteristics.
 - 1. Submit list on insulation manufacturer's letterhead of materials and accessories to be incorporated into Work.
 - 2. MSDS report.
 - 3. Include product name.
 - 4. Include preparation instructions and recommendations, installation methods, and storage and handling requirements.
 - 5. Include contact information for manufacturer and their representative for this Project.
- C. Test Reports:
 - 1. Submit evaluation service reports or other independent testing agency reports showing compliance with specified performance characteristics and physical properties.

1.6 QUALITY ASSURANCE

- A. Batt and Blanket Insulation Installer Quality Assurance: Work experience of [5] years minimum with work similar to work of this Section and this Project.

1.7 DELIVERY STORAGE AND HANDLING

- A. Delivery and Acceptance Requirements:
 - 1. Deliver materials and accessories in insulation manufacture's original packaging with identification labels intact and in sizes to suit project.
 - 2. Ensure insulation materials are not exposed to moisture during delivery.
 - 3. Replace wet or damaged insulation materials.
- B. Storage and Handling Requirements: Store materials off ground in dry location and protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.

1. Store in original packaging until installed.

1.8 WARRANTY

- A. Project Warranty: Refer to Contract Conditions for project warranty provisions.
- B. Manufacturer's warranty: Submit, for Owner's acceptance, manufacturer's standard warranty document executed by authorized company official. Manufacturer's warranty is in addition to and not intended to limit other rights Owner may have under Contract Conditions.
- C. Warranty period: 1 year commencing on Date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Basis-of-Design Product: Un-faced Mineral Wool Batt Insulation to be installed in wall and ceiling cavities between framing members: Manufacturer: ROCKWOOL™, 4594 Cayce Road, Byhalia, MS 38611-7550, Phone: 905-878-8474, Toll Free: 1-800-265-6878, e-mail: contactus@rockwool.com, URL: www.rockwool.com. Comfortbatt Thermal Batt insulation. R-14, 3 1/2" thick for wall cavities. R-23, 5 1/2" thick for ceiling joist cavities.
- B. Basis-of-design Product: U-nfaced Fiberglass Batt Blanket Insulation to be installed at attic floor over ceiling joists. Manufacturer: Owens Corning Insulating Systems, LLC, One Owens Corning Parkway, Toledo OHIO, USA 43659, 1-800-GET-Pink; www.owenscorning.com. 2" thick, R-6.7 insulation value. Pink Next Gen Fiberglas. 16" X 48" X 2" pieces
- C. Basis-of-design Product: Sound Attenuation Fire Blanket at demising walls between living units. Manufacturer: Owens Corning Insulating Systems, LLC, One Owens Corning Parkway, Toledo OHIO, USA 43659, 1-800-GET-Pink; www.owenscorning.com. Thermafiber SAFB 4.0 pcf Mineral Wool Insulation, 1" thick.
- D. Basis-of-Design Product: Sill-Gasket-Manufacturer: Owens Corning Insulating Systems, LLC, One Owens Corning Parkway, Toledo OHIO, USA 43659, 1-800-GET-Pink; www.owenscorning.com

2.2 DESCRIPTION

1. Unfaced Mineral Wool Batt Insulation to be installed in wall and ceiling cavities between framing members: Non-combustible, lightweight, semi-rigid mineral wool batt insulation to ASTM C655, Type 1.
2. Unfaced Mineral Wool Batt Insulation to be installed in wall and ceiling cavities between framing members: Class A Fire Rating, polyethylene foam

gasket, compressible specifically designed to seal air leakage.

2.3 PERFORMANCE CRITERIA

- A. Batt Insulation for exterior stud walls and attic floor: To ASTM C665, Type 1.
 - 1. Fire performance:
 - a. Non-combustibility: To ASTM E136.
 - b. Surface Burning Characteristics: To ASTM E84.
 - 1) Flame spread: 0.
 - 2) Smoke developed: 0.
 - 2. Thermal resistance: To ASTM C518.
 - 3. Density: 2 lb/ft³ to ASTM C167.
- B. Sill Gasket for exterior stud walls: Class A Fire Rating.

2.4 MATERIALS

- A. Un-faced Mineral Wool Batt Insulation to be installed in wall and ceiling cavities between framing members: Non-combustible, lightweight, semi-rigid mineral wool batt insulation, ASTM C665, Type 1.
 - 1. 48-inches lengths. Widths to fit spacing of framing members.
 - 2. Thickness: Match thickness of framing.
- B. Sound blanket insulation for use in demising walls between living units.
- C. Compressible, Lightweight polyethylene foam sill gasket
 - 1. Size: 3-1/2" wide x 3/16" thick.

PART 3 - EXECUTION

3.1 INSTALLERS

- A. Use only installers with [5] years minimum experience with work similar to work of this Section.

3.2 EXAMINATION

- A. Verification of Conditions: Verify that conditions of substrate previously installed under other Sections or Contracts are acceptable for insulation installation in accordance with manufacturer's written recommendations.
 - 1. Visually inspect substrate in presence of Architect.
 - 2. Ensure surfaces are free of snow, ice, frost, grease and other deleterious materials.
 - 3. Proceed with installation only after unacceptable conditions have been remedied and after receipt of written approval to proceed from Architect.
- B. Start of insulation installation indicates installer's acceptance of substrate installation conditions.

3.3 INSTALLATION

- A. Install insulation and gasket in accordance with manufacturer's written recommendations.
- B. Install insulation to maintain continuity of thermal protection to building elements and spaces.
- C. Do not compress insulation to fit into spaces.
- D. Fit insulation closely around electrical boxes, pipes, ducts, frames and other objects in or passing through insulation.
- E. Keep insulation minimum 3 inches from heat emitting devices such as recessed light fixtures, and minimum 2 inches from sidewalls of chimneys and vents.
- F. Do not enclose insulation until the building inspector issues a written approval.
- G. Attic floor blanket insulation shall be installed with sheets perpendicular to ceiling joists. End-to-end joints shall be located over mineral wood joist cavity insulation, not over ceiling joists.
- H. Sound attenuation fire blanket insulation shall be installed in two 1-inch layers for a total thickness of 2 inches. Stagger seams between layers.

3.4 CLEANING

- A. Progress Cleaning: Perform cleanup as work progresses.
 - 1. Leave work area clean at end of each day.
- B. Final Cleaning: Upon completion, remove surplus materials, rubbish, tools, and equipment.

3.5 PROTECTION

- A. Protect installed products and accessories from damage during construction.
- B. Repair damage to adjacent materials caused by insulation installation.

END OF SECTION 07 21 16

SECTION 07 25 00 – WEATHER RESISTANT BARRIER

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Weather resistant barrier for exterior wall assemblies with fiber cement siding, soffits and trim boards.
 - 2. Flashing, joint tape, fasteners, adhesives and accessories required to complete the weather resistant barrier installation.

1.3 REFERENCES

- A. Reference Standards:
 - 1. American Association of Textile Chemists & Colorists (AATCC):
 - a. AATCC Test Method 127- Water Resistance: Hydrostatic Pressure Test.
 - 2. AIR-INS, Inc. (A-I):
 - a. AIR-INS Air Permeance Test.
 - 3. ASTM International (ASTM):
 - a. ASTM D374-99 Test Methods for Thickness of Solid Electrical Insulation.
 - b. ASTM D882-00 Test Methods for Tensile Properties of Thin Plastic Sheeting
 - c. ASTM D1117-99 Test Methods for Nonwoven Fabrics
 - d. ASTM E84-01 Test Method for Surface Burning Characteristics of Building Materials.
 - e. ASTM E96-00 Test Methods for Water Vapor Transmission of Materials.
 - f. ASTM E1677-95(2000) Specification for Air Retarder (AR) Material or System for Low-Rise Framed Building Walls.

4. Technical Association of the Pulp & Paper Industry (TAPPI)
 - a. TAPPI T-410 Grammage of Paper and Paperboard (Weight per Unit Area).
 - b. TAPPI T-460 Air Resistance of Paper (Gurney Method).

1.4 SUBMITTALS

- A. Submit product data and samples in accordance with Section 01330.
- B. Product Data: Manufacturer's product data sheets for each product to be used, including:
 1. Substrate preparation instructions and recommendations.
 2. Material storage, handling and protection requirements and recommendations.
 3. Material installation methods.
- C. Samples: Actual pieces of weather resistant barrier material, not less than 12 inches square.
 1. Test Results: Submit copies of test results showing weather resistant barrier performance characteristics equaling or exceeding those specified.

1.5 QUALITY ASSURANCE

- A. Manufacturer qualifications: Provide weather resistant materials, including barrier, flashing, joint tape, fasteners, adhesives and accessories, produced by one manufacturer.
 1. After the pre-installation conference and during initial weather resistant barrier installation, a qualified manufacturer's representative shall conduct a timely inspection of the installation to verify compliance with manufacturer's installation instructions and recommendations. Submit inspection reports to the Architect and Contractor upon completion of inspection.
 2. There shall be no deviation made from the manufacturer's installation instructions without prior written approval of the manufacturer.
- B. Pre-installation conference: Not less than two weeks before start of weather resistant barrier and flexible flashing installation, meet at project site with Architect, Contractor, barrier material manufacturer's representative. Review project requirements, required submittals, status of substrate work, areas of potential conflict and interference, availability of materials, installer's personnel, equipment and facilities, construction schedule, weather and forecasted weather conditions and coordinate methods, procedures and sequencing requirements for proper installation, integration and protection of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage and Protection: Protect materials from rain and physical damage. Provide cover on top and on all sides, allowing for adequate ventilation. Store all products in a dry area away from high heat, flames or sparks.

1.7 SEQUENCING AND SCHEDULING

- A. Review requirements for sequencing of installation of weather resistant barrier with installation of windows, doors, and flashing to provide a weather-tight installation.
- B. Schedule installation of weather resistant barrier materials and covering with finish materials within four months of installation.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Manufacturer: Subject to compliance with requirements, provide products produced by the following or approved as equal by Architect:
 - 1. Dupont Company.

2.2 MATERIALS

- A. Weather resistant barriers:
 - 1. Dupont Company, Tyvek® StuccoWrap® for fiber cement siding systems.
- B. Weather Resistant barrier: 100% flash spun-bonded olefin sheets of high density polyethylene fibers bonded together by heat and pressure, non-woven, non-perforated, combined with a UV stabilizing additive:
 - 1. Provide weather resistant barrier material complying with the manufacturer's published performance characteristics.
 - 2. Classification: ASTM E 1677, Type I; air leakage at 25mph wind pressure less than 0.06 cubic feet per minute per square foot (0.0003 cubic m per second per square in).
 - 3. Water Vapor Transmission: 28 perms Commercial Wrap; 50 perms StuccoWrap per ASTM E 96, Method B.
 - 4. Water Penetration Resistance: Minimum 280 cm Commercial Wrap; 210 cm StuccoWrap, per AATCC Test Method 127.
 - 5. Basis Weight: Minimum 2.7 oz/yd² Commercial Wrap; 2.1 oz/yd² StuccoWrap, per TAPPI Test Method T-410.

6. Breaking Strength: Minimum 38/35 lbs/in Commercial Wrap; 30/30 lbs/in StuccoWrap, per ASTM D882 Test Method A.
 7. Tear Resistance: 12/20 Commercial Wrap; 7/9 StuccoWrap, ASTM D1117.
 8. Surface Burning Characteristics: Class A, StuccoWrap flame spread 5, smoke developed 20.
- C. Sealing Tape: DuPont Company Tyvek® Contractor Tape.
- D. Fasteners: DuPont Wrap Caps, 1 inch diameter plastic cap nails.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates and installation conditions. Do not proceed with weather resistant barrier installation work until unsatisfactory conditions have been corrected.
- B. Installation constitutes acceptance of existing conditions and responsibility for satisfactory performance.

3.2 INSTALLATION – GENERAL

- A. Install the weather resistant barrier vertically over exterior side of exterior wall sheathing.
- B. Unwrap weather resistant barrier roll at corner, leaving 12 inches at backside.
 1. Apply StuccoWrap® with grooved surface pattern in vertical position to allow water to drain.
- C. Maintain roll vertically plumb during installation. Extend bottom edge of roll over termite shield 1 inch.
- D. Secure weather resistant barrier on vertical stud line with 1 inch diameter plastic cap nails, minimum 16 inches o.c. in both directions.
- E. Unroll barrier directly over windows and doors.
- F. Weather resistant barrier wrapped around the upper floor should overlap the weather resistant barrier on the lower floor by 6-inches minimum.
- G. Tape any accidental tears or damage.

3.3 INSTALLATION AT WINDOWS AND DOORS

- A. Coordinate installation of weather resistant barrier with installation of flashing at windows and doors. Install flashing at windows and doors in accordance with Section 07650 – Self Adhering Flashing.
- B. Install weather resistant barrier prior to installation of windows and doors as follows:
 - 1. Windows:
 - a. Prepare each window rough opening by cutting a modified “I” pattern in the weather resistant barrier. Horizontally cut weather resistant barrier along bottom of header. Vertically cut weather resistant barrier down the center of window openings from top of the window opening down to two thirds of the way to the bottom of the window openings. Diagonally cut weather resistant barrier from the bottom of the vertical cut to the left and right bottom corners of the opening.
 - b. Fold side and bottom flaps into window opening and fasten every 6 inches. Trim off excess.
 - c. At corners of window frame, cut weather resistant barrier at 45 degree angles creating a flap. This overlap shall overlap the window flange and head flashing after they are installed. Tape 45 degree seams and horizontal seam along window head using sealing tape.
 - 2. Doors:
 - a. Prepare each rough door opening by cutting a standard ‘I’ pattern in the weather resistant barrier. This is done as follows
 - b. Horizontally cut weather resistant barrier along bottom of door frame header and along top of sill.
 - c. Vertically cut weather resistant barrier down the center of door openings from the top of the door opening (header) down to the bottom door opening (sill)
 - d. Fold side flaps inside around door openings and fasten every 6 inches. Trim off excess.
 - e. At top corners of door frame, cut weather resistant barrier at 45 degree angles creating a flap. This flap shall overlap the door flange and head flashing after they are installed. Tape 45 degree seams and horizontal seam along door head using sealing tape.

3.4 REPAIR AND PROTECTION

- A. Tape remaining horizontal seams and seal joints and penetrations through weather resistant barriers with sealing tape before installation of finish materials. Tape any remaining vertical breaks or overlaps of the weather resistant barrier. Avoid

taping edges of weather resistant barrier to sheathing or substrates. Provide strips of cut weather resistant barrier material as necessary to provide weather resistant barrier to weather resistant barrier taped joints.

- B. Protect installed weather resistant barriers from damage. Ensure that weather resistant barriers are airtight, free from holes, tears, and punctures immediately prior to installation of finish materials.

END OF SECTION 07 25 00

SECTION 07 31 13 - ASPHALT SHINGLES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Textured asphalt shingles and ridgecaps.
 - 2. Felt underlayment.
 - 3. Sheet metal edge trim.
 - 4. Vent pipe stack flashing.
 - 5. Accessories
 - 6. Fortified™ roof requirements, including certifications.
- B. **All new roofs shall be certified as Fortified™ roofs; they shall comply with the wind mitigation standard adopted by the Louisiana Fortify Homes Program (LFHP). This wind mitigation standard is known as the Fortified™ Roof Standard, and it was developed by the Institute for Business & Home Safety (IBHS). The Contractor shall pay all costs for the certifications, including any and all inspection fees.**
 - 1. See <https://fortifiedhome.org/roof/> for more information.
 - 2. Fortified™ is a trademark of the Institute for Business & Home Safety (IBHS).

1.3 SUBMITTALS

- A. Submit under provisions of Section 01 33 00.
- B. Product data for each type of product specified, including details of construction relative to materials, dimensions of individual components, profiles, textures, and colors.
- C. Samples for initial selection in the form of manufacturer's sample finishes showing the full range of colors and profiles available for each type of asphalt shingle indicated.
- D. Samples for verification in the form of 2 full-size units of each type of asphalt shingle indicated showing the full range of variations expected in these characteristics.

1.4 QUALITY ASSURANCE

- A. Fire-Test-Response Classification: Where products with a fire-test-response classification are specified, provide asphalt shingles identical to those tested according to ASTM E 108 or UL 790, Class A Fire, and listed by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify each bundle of asphalt shingles with appropriate markings indicating fire-test-response classification of applicable testing and inspecting agency.
- B. Wind Resistance Test Characteristics: Provide Class 4 asphalt shingles that comply with 130 mph wind design speed. Provide products identical to those tested under to ASTM D 3161, UL 997, or UL 2390 and ASTM D6381 in tandem. Identify each bundle of asphalt shingles with appropriate markings of applicable testing and inspecting agency.
- C. Asphalt Shingles shall carry Underwriter's Laboratories Labels as follows:
 - 1. UL® 790, Class A Fire Resistance
 - 2. UL® 997, Wind Resistance.

1.5 DELIVERY, STORAGE, AND HANDLING

- A. Deliver materials to Project Site in manufacturer's unopened bundles with labels intact and legible.
- B. Handle and store materials at Project site to prevent damage, staining, or other physical damage. Store roll goods on end. Comply with manufacturer's recommendations for job-site storage, handling, and protection.
- C. Roof top loading: Lay shingle bundles flat. Do not bend over the ridge.

1.6 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installing asphalt shingles only when existing and forecasted weather conditions will permit work to be performed according to manufacturers' recommendations and warranty requirements, and when substrate is completely dry.
- B. Do not install underlayment or shingles on wet surfaces.

1.7 WARRANTY AND WORKMANSHIP GUARANTEE

- A. General Warranty: The special warranty specified in this Article shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties workmanship guarantees made by the Contractor under requirements of the Contract Documents.

- B. Special Warranty: Submit a written warranty signed by manufacturer agreeing to repair or replace asphalt shingles that fail in materials or workmanship within the specified warranty period. Failures include, but are not limited to, deformation or deterioration of asphalt shingles beyond normal weathering.
 - 1. Warranty Period: Manufacturer's standard limited warranty but not less than 50 years from the date of Substantial Completion.
- C. Workmanship Guarantee: Submit workmanship guarantee (R-1) signed by Contractor and Roofing Subcontractor, a copy of which is included at the end of this section.
 - 1. Workmanship Guarantee Period: Two (2) years from the date of Substantial Completion.

1.8 REFERENCES

- A. ASTM D226 - Standard Specification for Asphalt-Saturated Organic Felt used in Roofing and Waterproofing.
- B. ASTM D3018 - Standard Specification for Class A Shingles Surfaced with Mineral Granules.
- C. ASTM D3161 - American Society for Testing and Materials. ASTM D3161. Standard Test Method for Wind-Resistance of Asphalt Shingles (Fan- Induced Method).
- D. ASTM D3462 - Standard Specification for Asphalt Shingles Made from Glass felt and Surfaced with Mineral Granules.
- E. ASTM D4586 - Standard Specification for Asphalt Roof Cement, Asbestos-Free.
- F. ASTM D4869 - Standard Specification for Asphalt - Saturated Organic Felt Shingle Underlayment Used in Roofing.
- G. ASTM D6757 - Standard Specification for Inorganic Underlayment for Use with Steep Slope Roofing.
- H. ASTM D108 - Standard Test Methods for fire tests of roof coverings.
- I. ASTM A446-85 - Grade G-90 Coating-Steel Sheet, Zinc Coated (Galvanized) by the Hot Dip Process, Structural (Physical) Quality.
- J. NRCA (National Roofing Contractors Association)- Roofing Manual.
- K. SMACNA - Architectural Sheet Metal Manual. (Latest Edition).
- L. ASTM D525 - Galvanized Coating.

- M. ASTM D659 - Number 7 Rating - Chalk Test.
- N. ASTM D2244 - Fade Test.
- O. ASTM D2794 - Adhesion - Impact.
- P. NAAMM (National Association of Architectural Metal Manufacturers) - Metal Finishes Manual.
- Q. ASTM D6381 - Standard Test Method for Measurement of Asphalt Shingle Mechanical Uplift Resistance.
- R. UL 2218 Class 4 - Test Method for Wind Resistant Asphalt Shingles with Sealed Tabs.
- S. UL 997- Wind Resistance.
- T. UL 790- Class A Fire Resistance.
- U. Fortified™ publications, including the following publications.
 - 1. Fortified™ Home 2020 Standard.
 - 2. Fortified™ Home Summary of Changes, 2020 Standard. (Changes from the 2019 Fortified Home™ – Hurricane and 2015 Fortified Home™ – High Wind Standard.)
 - 3. Fortified™ Home Roofing Checklist, Hurricane & Hail, version 2022.1.
 - 4. Fortified™ Home Roofing Checklist, High Wind & Hail.
 - 5. Fortified™ Home Roofing Checklist, High Wind, version 2022.1.
 - 6. Fortified™ Home General Flashing Guidelines of Steep-Sloped Roofs.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Asphalt Shingles including hip and ridge cap shingles:
 - a) GAF Building Materials Corporation; Timberline Armorshield II shingles.
 - b) Owens Corning; TruDefinition Duration FLEX shingles.
 - c) Malarkey Roofing Products; Legacy shingles.
 - 2. Shingle starter strip: Provide starter shingle strip in compliance with Fortified™ roof requirements.
 - a) MFM self-adhering shingle starter strip, adhered to metal drip edge flashing and roof sheathing.

3. Underlayment:

- a) Provide self-adhering underlayment that is recommended and approved by the asphalt shingle manufacturer as part of the roof warranty. **This underlayment must also be in compliance with Fortified™ roof requirements.**
- b) Grace Ice and Water Shield
- c) GAF Storm Guard

2.2 ASPHALT SHINGLES AND RIDGE CAPS

A. Colors, Blends, and Patterns: Where manufacturer's standard products are indicated, provide asphalt shingles with the following requirements:

1. Provide Architect's selections from manufacturer's full range of colors, textures, and patterns for asphalt shingles of type indicated.
2. Three-Dimensional, Fiberglass, Laminated Strip Shingles: Mineral-surfaced, self-sealing, laminated, multi-ply overlay construction, fiberglass-based, strip asphalt shingles, complying with both ASTM D 3018, Type I, and ASTM D 3462. Provide shingles with a Class A fire-test-r.
3. Response classification and that pass the wind-resistance-test requirements of ASTM D 3161, Type I.
4. Fungus Resistant: Provide shingles that have been surface treated to remain free of fungus and algae growth, which adversely effects the appearance of the roof, for at least 10 years.

B. Hip and Ridge Shingles: Manufacturer's, factory-precut units, color to match asphalt shingles, and as specified in Paragraph 2.2 B.

C. Starter shingles: Provide starter shingles in compliance with Fortified™ roof requirements.

2.3 METAL TRIM AND FLASHING

A. Sheet Metal Materials: Furnish the following sheet metal materials:

1. Galvanized-Steel Sheets: ASTM A446-85, Grade G90 Hot-Dip Galvanized steel with coating designation according to ASTM A525, 24 gage, unfinished.

- B. Metal Drip Edge: Brake-formed sheet metal with at least a 4-inch roof deck flange, a one inch overhang for a total of five inches; and a 1-1/2 inch fascia flange with a 1/2-inch drip at lower edge. Furnish the following material in lengths of 10 feet.
 - 1. Material: Galvanized-Steel Sheets. (See Paragraph 2.3A.1.)
- C. Vent Pipe (Stack) Flashing: Lead conforming to ASTM B 749, Type L51121, at least 1/16 inch thick, unless otherwise indicated. Provide lead sleeve sized to slip over and tum down into pipe, soldered to skirt at slope of roof extending at least 4 inches from pipe onto roof.

2.4 ACCESSORIES

- A. Synthetic Underlayment: 50-year self-adhering synthetic underlayment, in accordance with the requirements and approval of the asphalt shingle manufacturer's warranty.
- B. Asphalt Plastic Roof Cement: Non-asbestos fibrated asphalt cement, complying with ASTM D 4586.
- C. Asphalt Shingle Nails: Hot-dip galvanized steel, 0.120-inch diameter barbed shank, sharp-pointed, conventional roofing nails with a minimum 5/8-inch diameter head and of sufficient length to penetrate at least 1/4 inch through the plywood sheathing. Provide at ridge caps, the identical nail as the asphalt shingle but 3/4-inch longer to penetrate at least 1/4" through the plywood sheathing ridge cap and asphalt shingles combined.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrate for compliance with requirements for substrates, installation tolerances, and other conditions affecting performance of asphalt shingles. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean substrates of projections and substances detrimental to application. Cover knotholes or other minor voids in substrate with sheet metal flashing secured with noncorrosive roofing nails.
- B. Coordinate installation with flashings and other adjoining work to ensure proper sequencing. Do not install roofing materials until all vent stacks and other penetrations through roof sheathing have been installed and are securely fastened against movement.

3.3 INSTALLATION

ASPHALT SHINGLES

- A. General (Asphalt Shingles): Comply with manufacturer's instructions and recommendations but not less than those recommended by SMACNA, ARMA's "Residential Asphalt Roofing Manual" or "The NRCA Steep Roofing Manual."
- B. Provide self-adhering shingle starter strips along eaves, rake edges and ridges in accordance with the manufacturer's instructions and recommendations. But not less than those recommended by SMACNA, ARMA's "Residential Asphalt Roofing Manual": of "The NRCA Steep Roofing Manual."
- C. General (Steel Sheet Metal): Unless otherwise indicated, install sheet metal flashing and trim to comply with performance requirements, manufacturer's installation instructions, and SMACNA's "Architectural Sheet Metal Manual." Anchor units of work securely in place by method indicated, providing for thermal expansion of metal units; conceal fasteners where possible, and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weatherproof. Provide drip edge flashing over self-adhering roofing underlayment.
- D. Install exposed sheet metal work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates and to result in waterproof and weather resistant performance. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.
- E. Metal Edge Trim: Secure sheet metal at roof edges according to FM Loss Prevention Data Sheet 1-49 for specified wind zone (130 mph), but not less than 4 inches on center. Fasten drip edge flashing as per Fortified™ roof requirements.
- F. Self-Adhering Flashing Tape: After broom cleaning roof deck apply a 4-inch wide strip of self-adhering flashing tape ("Peel and Stick") to all plywood sheathing joints prior to installation of felt underlayment. Roll tape with roller. Seal around roof deck penetrations with roof tape.
- G. Underlayment: Install self-adhering underlayment in accordance with manufacturer's instructions and recommendations. **Install self-adhering underlayment in compliance with Fortified™ roof requirements.**
- H. Metal Flashing: Install metal flashing, trim and vent stack flashing as indicated and according to details and recommendations of SMACNA, the "Asphalt Roofing" section of "The NRCA Steep Roofing Manual" and ARMA's "Residential Asphalt Roofing Manual."
- I. Starter shingles: **Adhere shingle starter strip to roof edge flashing in compliance with Fortified™ roof requirements.**
- J. **Comply with Fortified™ roof requirements with regard to all materials and processes. The Contractor shall hire and pay for Fortified™ roof**

certifications procedures & fees for all roofs that are a part of this project. If any part of the Contract Documents conflicts with the previous two sentences, the previous two sentences shall govern.

ROOFING WORKMANSHIP GUARANTEE R-1

The Contractor shall provide one of these guarantees for each house constructed.

OWNER: Jefferson Parish Housing Services Development District
121 Paillet Drive
Harvey LA 70053

WHEREAS _____
Address _____ Telephone () _____
herein called the "Roofing Contractor", has performed roof replacement and roofing flashing accessories along with and miscellaneous items required for a complete roof system installation in accordance with the Contract Documents for the Project under a

Subcontract with: _____
Name of Project: _____
Location/Address: _____
Name and Type of Buildings(s): _____

Type(s) of Roof Deck(s): _____
Total Roof Area: _____ SF; Flashing, Edge: _____ LF; Base: _____ LF
Date of Substantial Completion: _____ Guarantee Period: _____
Two(2) Years Date of Expiration: _____

AND WHEREAS the Roofing Contractor has contracted (as a Subcontractor) to guarantee said work against water entry from faulty or defective materials and workmanship for the designated Guarantee period;

AND WHEREAS the General Contractor, by its acceptance of the Contract for the above described project, has jointly assumed with the Roofing Contractor the obligations to the Owner of said guarantee against leaks and faulty or defective materials and workmanship;
NOW THEREFORE the Roofing Contractor and the General Contractor jointly and severally guarantee, subject to the terms and conditions herein set forth, that during the Guarantee Period they will at their own cost and expense, make or cause to be made with approved procedures and materials such repairs to or replacements of said work resulting from water entry or faults or defects of said Work as are necessary to correct faulty and defective work and as are necessary to maintain said Work in watertight conditions and further to respond on or within two (2) working days upon written notification of leaks or defects by the Owner. Furthermore, they will at their own cost and expense maintain the roof for (2) years after acceptance, in accordance with the current edition of the Roof Maintenance Manual published by the Roofing Industry Educational Institute. The roof shall be inspected a minimum of twice each year, and a report prepared documenting the conditions observed at each inspection. These inspections shall be made once during the months of April or May and once during the months of September and October. Two copies of each report shall be forwarded to the Owner.

This Guarantee is made subject to the following terms and conditions:

1. Specifically excluded from this guarantee are damages to the Work, other parts of the building and building contents caused by: A) lightning, and storm (includes hurricanes and tornadoes), hailstorm, earthquakes and other unusual phenomena of the elements; B) fire; and C) structural failures causing excessive roof deck, edgings and related roof components movement. When the Work has been damaged by any of the foregoing causes, the Guarantee will be null and void until such damage has been repaired by the Roofing Contractor, and until the cost and expense thereof has been paid by the Owner or another responsible party so designated.
2. During the Guarantee Period, if the Owner allows alteration of the Work by anyone other than a Contractor approved in writing by the Roofing Subcontractor, General Contractor, and Roofing Material Manufacturer prior to the work being performed, including cutting, patching and maintenance in connection with penetrations, attachment of other work, and positioning of anything on the roof, this Guarantee shall become null and void upon the date of said alterations. If the Owner engages the Roofing Contractor to perform said alterations, the Guarantee shall not become null and void, unless the Roofing Contractor, prior to proceeding with said work, shall have notified the Owner in writing, showing reasonable cause for claim that said alterations would likely damage or deteriorate the Work, thereby reasonably justifying a termination of this Guarantee.
3. During the Guarantee Period, if the original use of the roof is changed and it becomes used for, but for which it was not originally designed or specified, as a promenade, work deck, spray-cooled surface, flooded basin, or other use of service more severe than originally specified, this Guarantee shall become null and void upon the date of said change.
4. During the Guarantee Period, if any building or area of a building is changed to uses creating extremes of interior temperature and/or humidity, but for which it was not originally designed and specified, without provisions and alterations made to the building which effectively contain or control these conditions, this guarantee shall become null and void upon the date of said change.
5. The Owner shall promptly notify the Roofing Contractor in writing of observed, known or suspected leaks, defects or deterioration, and shall afford reasonable opportunity for the Roofing Contractor to inspect the Work, and to examine the evidence of such leaks, defects or deterioration.
6. This Guarantee is recognized to be the only guarantee of the General and Roofing Contractor on said work, and shall not operate to restrict or cut off the Owner from other remedies and recourses lawfully available to him in case of roofing failure. Specifically, this Guarantee shall not operate to relieve the Roofing Contractor of his responsibility for performance of the original work, regardless of whether the Contract was a Contract directly with the Owner or a Subcontract with the Owner's General Contractor.

IN WITNESS THEREOF, this instrument has been duly executed this

_____ day of _____, 20_____

Roofing Contractor's Signature:

Typed Name: _____

Representing (company name): _____

Telephone Number: _____

And has been countersigned by the General Contractor issuing the Roofing Contractor's Subcontract for said work:

Name of General Contractor: _____

Date: _____ Authorized Signature: _____

Representing (company name): _____

Typed Name: _____

Telephone Number: _____

WITNESS: _____

AGENDA FOR PRELIMINARY ROOFING CONFERENCE

PURPOSE: Establish a direct line of communication, iron out initial questions regarding the project and to review project submittal requirements.

TIMING: The meeting should be held after award of Contract and at least six weeks prior to the anticipated start of roofing.

1. A complete set of Construction Documents (plans and specifications) to be available for review.
2. All meeting minutes to be furnished to all parties. Establish project record keeping procedures.
3. Review tentative progress schedule for roofing. Set approximate date.
4. Review roofing system and insulation requirements.
5. Weather considerations as they may apply to the project roofing installation.
6. Temporary roofing guidelines for the project. Who and when will final decision be made, if necessary.

7. Inspection and Testing Requirements:

Name inspection Firm: _____

Name of Inspector: _____

Phone: _____

a. On-Site Inspection - Discuss project requirements.

b. Laboratory Tests

8. Roof Deck:

Type and Thickness: _____

Slope: _____

Location and Type of Drains: _____

Tentative Schedule for Erection: _____

Nailers, curbs and sheet metal must be completed prior to roofing application FM or UL requirements.

9. Anticipated material storage areas and equipment set-up locations touched upon. Review requirements.

10. Specific submittals from the Roofing Subcontractor:

a. Material approval list.

b. Shop drawings (if any).

c. Product material brochures and samples.

d. Manufacturer's Guarantee review for compliance with specifications.

11. Specific project detail discussion. (Include perimeter wall construction and rooftop mechanical equipment details.)

12. Other: _____

13. Review above items briefly and establish date for tentative Pre-Application Conference.

AGENDA FOR PRE-APPLICATION CONFERENCE

PURPOSE: To verify readiness of the project structure
To review assignments of Preliminary Conference
To scan last minute details, changes or corrections
To review anticipated schedule of progress

TIMING: Within one week of roofing application **ATTENDANCE:** List Attendees
(The roofing job superintendent or foreman and the project roofing inspector should attend this meeting).

1. Copies of approved submittals should be available for review. Are any material changes required due to availability problems or other? Reminder that formal approvals are still required.
2. Review minutes of Preliminary Conference.
3. Discuss revised Roofing Application Schedule.
4. Equipment set-up and on-site material storage.
5. Deck Readiness:
 - a. Any required roof deck certifications must be in order
 - b. Rooftop inspection by those in attendance
 - c. Drain hookups complete
 - d. Curbs, nailers, roof deck penetrations, perimeter edges and mechanical equipment should all be set and complete
6. Review roof system, including insulation above deck. Discuss the required application of each to the other components.
 - a. Bitumens, felts, use of EVT, all typical application methods and any special techniques required for specified system.
 - b. Mechanical or adhesive attachments.
 - c. Vapor Retarders
 - d. Flashings
 - e. Saddles and/or crickets
 - f. Venting
 - g. Sheet metal

7. Phase Construction Guidelines for project. Factors affecting guidelines include local practices, climate and weather considerations. Tie-offs at days end.
8. Temporary roofing final decisions.
9. Housekeeping, material handling and finished work protection requirements.
10. Inspection and testing requirements - who, frequency, type method of testing, reporting, etc.
11. Project changes in plans, specifications or procedures to be followed - discuss and establish who can approve and how documented.
12. Warranties, guarantees, manufacturer bonds or maintenance agreements (terms, types, who issues, when) for roofing and sheet metal material.

NOTES:

AGENDA FOR ROOFING FINAL INSPECTION AND WRAP-UP

PURPOSE: To assure 100% completion of project requirements.

TIMING: Just before the Roofing Contractor concludes his work at the site.

1. Attendance should include those in attendance at the Pre-Application Conference.
2. Complete rooftop walk over and review:
 - a. Perimeter edges
 - b. Walls
 - c. Curbs and other equipment
 - d. Drains
 - e. Rooftop penetrations
 - f. Site cleanup
 - g. Sheet metal
3. Final Punch List establishing items to be completed. Copies to all parties.
4. Summary of project records. Organize for final file. Wrap up any loose ends. Checklist for final documents should include:
 - a. Warranties, guarantees, manufacturer bonds, or maintenance agreements.
 - b. Inspection forms, reports, certificate of final completion
 - c. Laboratory final reports (if any required)
5. Recommendation for routine maintenance program to owner.
6. Discuss responsibility for roof system protection until project completed. Responsibility for coordination usually rests with General Contractor. Any damage or additional work to be conducted by original Roofing Contractor in order to keep original guarantee valid.
7. Substantial Completion will not be made without submittal and approval of fully executed guarantees for each type of roof installed, which shall include, but not necessarily be limited to the Roofing Material Manufacturer's Guarantee, Roof Completion Information Form and Contractor's Guarantee on RI.

ROOF COMPLETION INFORMATION

New Affordable Housing on Vacant Lots, Phase 1, Marrero, Louisiana

Roof Spec. Section No. 07 31 13 Replacement: No New: Yes

Roof Type:	Surfacing Type:	Bitumen Type:	Drainage Type:
1.BU	1. Gravel	1. Hot Asphalt	1. Over the Edge Roof Drains
2.SBS Mod. Bit.	2. Smooth Uncoated	2. Torched Asphalt 2.	3. Perimeter Gutter
3.APP Mod. Bit.	3. Modified Asphalt	3. Cold Process	4. Internal Gutter
4.PVC/CPV	4. Ceramic Granules	4. Pitch	5. ----
5.PUF	5. Silicone	5. Modified	
6.Metal	6. Acrylic	6. None	Total Penetrations:
7.Shingle	7. Urethane	7.	
8. Tile	8. Aluminum		
9.	9.		

Slope:	Deck Type:	Insulation:	No. of Piles
1.None	1.Structural Concrete	1.Polyurethane Foam	
2.1/8 in./ft.	2. Gypsum	2.Fiberglass	Insulation Thickness
3.1/4 n./ft.	3.Metal	3. Perlite	
4.1/2 in./ft.	4.Lt. Wt. Concrete	4. Tapered Perlite Roof Area (sq. ft.)	
5.Other	5.Cement Fiber	5. Polystyrene	
	6. Wood	6. Wood Fiber	No. of Squares
		7. None	

Roofing Contractor: _____ Warranty Beginning Date: _____

Address: _____ Warranty Ending Date: _____

Roofing Contractor's Telephone: _____

Roofing Manufacturer: _____

Address: _____

Roofing Manufacturer's Telephone: _____

Roof Warranty Number: _____ Beginning Date: _____

Ending Date: _____

SECTION 07 46 46 – FIBER CEMENT SIDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Provide fiber-cement, lap siding, vented soffit panels, and trim in sizes where shown on drawings or as specified herein.
 - 2. Coordinate this section with interfacing and adjoining work for proper sequence of installation.

1.3 SUBMITTALS

- A. Provide shop drawings, product data, and samples under provisions of Section 01 33 00 as follows:
 - 1. Submit three 6 inch x 6 inch pieces each of smooth fiber cement siding panel, and trim widths shown and specified herein.
 - 2. Submit product data, installation data and other pertinent manufacturer's literature.

1.4 PRODUCT HANDLING

- A. Lay flat fiber cement panels, and trim on a smooth, level surface. Protect edges and corners from chipping. Store under cover and keep dry prior to installation.

1.5 JOB CONDITIONS

- A. Inspect existing job conditions prior to start work on fiber cement siding, panels, and trim.
- B. Install fiber cement panel and trim to dry surfaces.
- C. Repair any punctures or tears in the weather resistive barrier prior to the installation of the siding.
- D. Protect siding from other trades.

1.6 WARRANTY

- A. Provide manufacturer's standard product warranty against manufacturing defects in fiber cement siding and panels for 50 years and cement fiber trim for 10 years.
- B. Workmanship: Application limited warranty for two (2) years from the date of substantial completion.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with requirements, submit products produced by James Hardie Building Products as follows:
 - 1. Fiber Cement Lap Siding; HardiPlank siding. Type: Smooth, 6-1/4" x 12' x 5/16" siding boards.
 - 2. Fiber Cement Soffit at roof eaves. Type: Smooth Vented Soffit Panel, 12", x 12' X 1/4".
 - 3. Fiber cement panel at exterior ceilings of doorway alcoves and at any other locations indicated in the Drawings. Basis of Design: HardiPanel. Type: Smooth, 4' x 8' x 1/4" panel.
 - 4. Fiber cement trim; Basis of Design, HardiTrim. Type: XLD Trim, smooth. Trim board thickness shall be 5/4 nominal (1" actual) unless noted otherwise.
- B. Siding, panels and trim shall meet the following building code compliance National Evaluation Report No. NER 405 (BOCA, ICBO, SBCCI); City of Los Angeles, Research Report No. 24862; Metro Dade County, Florida Acceptance No. 94-1234.04; US Department of Housing and Urban Development Materials Release 1263a; California DSA PS-019; and City of New York MEA 223-93-M. Non-asbestos fiber-cement siding shall be non-combustible when tested in accordance with ASTM test method E136.
- C. Fiber Cement Siding: Siding made from fiber-cement board that complies with ASTM C1186, Type A, Grade II; is classified as noncombustible when tested according to ATM E136; and has a flame-spread index of 25 or less when tested according to ASTM E84.

2.2 ACCESSORIES

- A. Siding Accessories: Provide starter drip strips, edge trim, corner cap, and other items as recommended by siding manufacturer for building configuration.
 - 1. Provide accessories made from same material as siding, unless otherwise indicated.

2. Provide accessories matching color and texture of siding, unless otherwise indicated.
- B. Fasteners: Use hot-dipped galvanized fasteners.
1. Where fasteners will be exposed to view, field paint fasteners in color to match item being fastened.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Correct conditions detrimental to timely and proper completion of work.

3.2 INSTALLATION - FIBER CEMENT LAP SIDING

- A. Comply with lap siding manufacturer's written installation instructions.

3.3 INSTALLATION – FIBER CEMENT TRIM

- A. Install flashing around all wall openings.
- B. Fasten through trim into structural framing through sheathing. Fasteners shall penetrate minimum 3/4 inch or full thickness of sheathing. Additional fasteners may be required to ensure adequate security.
- C. Place fasteners no closer than 3/4 inch and no further than 2 inch from side edge of trim board and no closer than 1 inch from end. Fasten maximum 16 inch on center.
- D. Maintain clearance between trim and adjacent finished grade.
- E. Trim inside corner with single board.
- F. Install single board of outside corner board then align second corner board to outside edge of first corner board. Do not fasten Hardi Trim board to Hardi Trim board.
- G. Allow 1/8 inch gap between trim and siding.
- H. Seal gap with sealant.
- I. Shim fascia board as required to align with corner trim.
- J. Install HardiTrim fascia over structural sub-fascia at roof overhangs.
- K. Size the exposures (vertical dimensions of exposed portions of siding boards) in compliance with the Drawings. Provide marks (in permanent black ink) on the weather-resistant barrier at the front of each building to show locations of all

siding courses for inspection by Architect prior to installation of siding. Do not install siding until marked locations are approved by the Architect.

3.4 INSTALLATION – FIBER CEMENT SOFFIT PANEL

- A. Block framing between studs where fiber cement panel siding horizontal joints occur.
- B. Place fasteners no closer than 3/8 inch from panel edges and 2 inch from panel corners.
- C. Specific framing and fastener requirements refer to Tables 2 and 3 in National Evaluation Service Report No. NER-405.

3.5 FIELD PAINTING - FIBER CEMENT LAP SIDING, PANEL AND TRIM

- A. Field paint in accordance with Section 09 91 31 - Exterior Paint.

END OF SECTION 07 46 46

SECTION 07 65 00 - FLEXIBLE FLASHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Self-adhering flexible and straight flashing at door and window opening heads, jambs and sills – and at other locations if indicated in the Drawings.

1.3 REFERENCES

- A. Reference Standards:
 - 1. ASTM International (ASTM):
 - a. ASTM D751-00 Test Methods for Coated Fabrics.
 - b. ASTM D1079-00a Terminology Relating to Roofing, Waterproofing, and Bituminous Materials.
 - c. ASTM D1970-00 Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection.
 - d. ASTM D3746-85(1996) Test Method for Impact Resistance of Bituminous Roofing Systems.
 - e. ASTM D5683-95(2000) Test Methods for Flexibility of Roofing and Waterproofing Materials and Membranes.
 - f. ASTM D6221-00 Specification for Reinforced Bituminous Flashing Sheets for Roofing and Waterproofing.
 - g. ASTM E84-01 Test Method for Surface Burning Characteristics of Building Materials.
 - h. ASTM E96-00 Test Methods for Water Vapor Transmission of Materials.

1.4 SUBMITTALS

- A. Submit shop drawings product data and samples in accordance with Section 01 33 00.
- B. Product Data: Manufacturer's data sheets for each product to be used, including:
 - 1. Substrate preparation instructions and recommendations.
 - 2. Material storage, handling and protection requirements and recommendations.
 - 3. Material installation methods.
- C. Shop Drawings: Show layouts of flexible flashings, including isometrics relating to window, door and louver opening head, jamb and sill details.
 - 1. Identify material, thickness, and basis weight for each item and location in Project.
 - 2. Indicated details for installing flashings, including profiles, shapes, seams and dimensions.
 - 3. Indicate details for fastening, joining, supporting, and anchoring flexible flashing tape, including fasteners, clips, and attachments to adjoining work.
 - 4. Indicate details of coordination with expansion joint covers, sheet metal flashing and trim assemblies, and roof expansion assemblies, including 3-dimensional directions of expansion and contraction movements.
- D. Samples: Actual pieces of materials specified, not less than 6 inches square.
- E. Test Results: Submit copies of test results showing flexible flashing performance characteristics equaling or exceeding those specified.

1.5 QUALITY ASSURANCE

- A. Manufacturer qualifications: Provide flexible flash materials, including primers, sealants and accessories, produced by one manufacturer.
 - 1. After the pre-installation conference and during initial weather resistant membrane and flexible flashing installation, a qualified manufacturer's representative shall conduct a timely inspection of the installation to verify compliance with manufacturer's installation instructions and recommendations. Submit inspection reports to the Architect and Contractor upon completion of inspection.
 - 2. There shall be no deviation made from the manufacturer's installation instructions without prior written approval of the manufacturer.
- B. Pre-installation conference: Not less than two weeks before start of weather resistant membrane and flexible flashing installation, meet at project site with Architect, Contractor, weather resistant barrier and flexible flashing material manufacturer's representative. Review project requirements, required submittals,

status of substrate work, areas of potential conflict and interference, availability of materials, installer's personnel, equipment and facilities, construction schedule, weather and forecasted weather conditions and coordinate methods, procedures and sequencing requirements for proper installation, integration and protection of the work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Delivery: Deliver materials in manufacturer's original, unopened, undamaged containers with identification labels intact.
- B. Storage, Handling and Protection:
 - 1. Store all products in a dry area away from high heat, flames or sparks. Store flashing where temperatures will not exceed 90 degrees F for extended periods. Store products in manufacturer's unopened packaging until ready for installation.
 - 2. Dispense the needed amounts of materials from the manufacturer box.
 - 3. Protect materials from rain and physical damage. Provide cover on top and on all sides, allowing for adequate ventilation.

1.7 PROJECT CONDITIONS

- A. Environmental Limitations: Do not install flexible flashing materials on wet or damp surfaces. Surfaces shall be free from dirt, oils, lubricants or other debris that may inhibit adhesion of the flashing tape to the substrate. After precipitation, allow a minimum of 24 hours for drying before installing the flashing. For optimal performance, install flexible flashing materials at temperatures above 40 degrees F.

PART 2 - PRODUCTS

2.1 MANUFACTURER

- A. Subject to compliance with requirements, submit products produced by the following manufacturer. Basis of Design: DuPont Company.
 - 1. Dupont Company.

2.2 MATERIALS

- A. Self-Adhering Flashing: Basis of Design: DuPont Company Tyvek® flashing system, Dupont Company Tyvek® FlexWrap™ flexible flashing tape and Dupont Company Tyvek® StraightFlash™ straight flashing tape complying with the following:

1. Poly-ethylene laminate and butyl-based adhesive flashing tape with incorporated additives to provide ultraviolet light resistance and fire retardant properties; complying with the following:
 - a. Face Material composition: Polyethylene laminate
 - b. Face color: White
 - c. Adhesive composition: Butyl adhesive containing fire retardant additive
 - d. Thickness: 30 mils
 - e. Release liner: 1-piece siliconized paper
 - f. Dimension: 4 inch width

- B. Flexible Flashing Tape: Basis of Design: DuPont Flashing Tyvek® FlexWrap™, an elasticized polyethylene laminate and butyl-based adhesive flashing tape with incorporated additives to provide ultraviolet light resistance and fire retardant properties; complying with the following:
 1. Face Material composition: Elasticized polyethylene laminate.
 2. Face color: White.
 3. Adhesive composition; Butyl adhesive containing non-halogen fire retardant additive
 4. Thickness: 70 mils.
 5. Release liner: 2-piece siliconized paper.
 6. Elastic Elongation, MD (length @ Full Extension/ Length @ Relaxed): >230% @ 70 F.
 7. Dimension: 8 or 10 inch width

2.3 ACCESSORIES

A. Sealants:

1. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - a. OSI® Quad Pro-Series®; solvent release kraton rubber sealant.
 - b. DAP® DynaFlex 230™.
2. Material: ASTM C 920, elastomeric polymer sealant, of type, grade, class, and use classifications required to seal joints and remain watertight.

B. Primer:

1. Subject to compliance with requirements, provide products produced by one of the following manufacturers: BM Corporation.
 - a. Basis of Design: 3M High Strength 90.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Do not begin installation until substrates have been properly prepared to receive, constructed to fully support flashing, and sloped where required to provide positive drainage of water to building exterior.
- B. Verify that surfaces to receive flashing are thoroughly dry, free from loose materials, and reasonably smooth.
- C. Do not proceed with installation until unsatisfactory conditions are corrected.

3.2 PREPARATION

- A. Protection: Protect adjacent surfaces, fixtures and equipment from damage.
- B. Surface Preparation: Substrate must be smooth, clean, dry and free of voids, spalled areas, loose substrate, loose nails, other sharp protrusions or other matter that will hinder the adhesion or regularity of the flashing tape installation. Clean loose dust or dirt from surface wherever flashing tape is to be applied by wiping with a clean dry cloth or brush.
- C. Remove existing weather barriers, flashings, carrier or protective films and similar materials that would impede adhesion from substrates indicated to receive elasticized flexible flashing tape. Clean surfaces thoroughly prior to installation.

3.3 INSTALLATION

- A. Install window, door, and sill flashing after installation of weather resistant barrier as follows:
 - 1. Prepare weather resistant membrane for door and window installation.
 - 2. Make a modified "I-cut" in the weather resistant barrier.
 - 3. Cut a flap above the rough opening to allow head flashing installation.
 - 4. Fold side and bottom flaps into rough opening and secure. Flip head flap up and temporarily secure.
 - 5. Cut flashing tape at least 12 inches longer than width of rough opening sill.
 - 6. Remove first piece of release paper, align edge of sill flashing with inside edge of sill, and adhere into rough opening across sill and up jambs (minimum 6 inches). Sill flashing should not wrap onto interior surface of framing.
 - 7. Remove second release paper.
 - 8. Fan flashing tape at bottom corners onto face of wall.
 - 9. Firmly press sill flashing to insure full adhesion.

10. Secure edges of bottom corners with approved sealing tape or mechanical fasteners.
 11. Apply continuous bead of caulk to wall or backside of window mounting flange across jambs and head. Do not apply caulk across sill.
 12. Install door/window according to manufacturer's instructions
 13. Remove release paper and install straight flashing tape jamb flashing overlapping entire mounting flange of both jambs. Extend jamb flashing 6-inches above top of rough opening to below bottom of sill flashing.
 14. Remove release paper and install straight flashing tape as head flashing overlapping entire mounting flange. Head flashing should extend beyond outside edges of both jamb flashings.
 15. Flip head flap down over the head flashing.
 16. Secure flap above window with approved sealing tape.
 17. Caulk (using backer rod if necessary) to seal rear of window/door frame to rough opening.
- B. Other Openings and Penetrations: Provide flashings for other openings as required to provide weather tight barrier. Install shingle lapped components to direct water to exterior of building.

END OF SECTION 07 65 00

SECTION 07 84 00 – FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Through-penetration firestopping in fire rated construction.
 - 2. Construction-gap fire-stopping at connections of the same or different materials in fire rated construction.
 - 3. Firestopping to be applied at the demising walls in the attics of two-family houses.

1.3 REFERENCES

- A. Underwriters Laboratories
 - 1. U.L. Fire Resistance Directory
 - a. Through-penetration firestop devices (XHCR)
 - b. Fire resistance ratings (BXUV)
 - c. Through-penetration fire-stop systems (XHEZ)
 - d. Fill, void, or cavity material (XHHW)
 - 2. Warnock Hersey
- B. American Society for Testing and Materials Standards:
 - 1. ASTM E814 - 88: Standard Test Method for Fire Tests of Through-Penetration Firestops.

1.4 DEFINITIONS

- A. Assembly: Particular arrangement of materials specific to given type of construction described or detailed in referenced documents.
- B. Barriers: Time rated fire walls, and smoke barrier walls.
- C. Fire-stopping: Methods and materials applied in penetrations and unprotected openings to limit spread of heat, fire, gasses and smoke.

- D. Penetration: Opening or foreign material passing through or into barrier such that full thickness of rated materials is not obtained.
- E. Construction Gaps: Gaps between adjacent sections of walls, and exterior walls.
- F. System: Specific products and applications, classified and numbered by Underwriters Laboratories, Inc. to close specific barrier penetrations.
- G. Sleeve: Metal fabrication or pipe section extending through thickness of barrier and used to permanently guard penetration. Sleeves are described as part of penetrating system in other sections and may or may not be required.

1.5 SYSTEM DESCRIPTION

- A. Design Requirements
 - 1. Fire-rated construction: Maintain barrier fire resistance ratings including resistance to cold smoke at all penetrations, connections with other surfaces or types of construction, at separations required to permit building movement and sound or vibration absorption, and at other construction gaps.

1.6 SUBMITTALS

- A. General: Submit shop drawings and product data under provisions of Section 01 33 00 and as follows:
 - 1. Product data: Manufacturer's specifications and technical data including the following:
 - a. Detailed specifications of construction and fabrication.
 - b. Manufacturer's installation instructions.
 - 2. Shop drawings: Indicate dimensions, description of materials and finishes, general construction, specific modifications, component connections, anchorage methods, hardware, and installation procedures plus the following specific requirements.
 - a. Details of each proposed assembly identifying intended products and applicable UL System number, or UL classified devices.
 - b. Manufacturer or manufacturers representative shall provide qualified engineering judgments and drawings relating to non-standard applications as needed.
 - 3. Quality control submittals:

- a. Statement of qualifications.
- 4. Applicators' qualifications statement:
 - a. List past projects indicating required experience.

1.7 QUALITY ASSURANCE

- A. Installer's qualifications: Firm experienced in installation or application of systems similar in complexity to those required for this project, plus the following:
 - 1. Acceptable to or licensed by manufacturer, State or local authority where applicable.
 - 2. At least 2 years experience with systems.
 - 3. Successfully completed at least 5 comparable scale projects using this system.
- B. Local and State regulatory requirements: Submit forms or acceptance for proposed assemblies not conforming to specific UL Fire-stop System numbers, or UL classified devices.
- C. Materials shall have been tested to provide fire rating at least equal to that of the construction.

1.8 DELIVERY, STORAGE, AND HANDLING

- A. Packing and shipping:
 - 1. Deliver products in original unopened packaging with legible manufacturer's identification.
 - 2. Coordinate delivery with scheduled installation date, allow minimum storage at site.
- B. Storage and protection: Store materials in a clean, dry, ventilated location. Protect from soiling, abuse, moisture and freezing when required. Follow manufacturer's instructions.

1.9 PROJECT CONDITIONS

- A. Existing conditions:
 - 1. Verify existing conditions and substrates before starting work. Correct unsatisfactory conditions before proceeding.
 - 2. Proceed with installation only after penetrations of the substrate and supporting brackets have been installed.

- B. Environmental requirements:
1. Furnish adequate ventilation if using solvent.
 2. Furnish forced air ventilation during installation if required by manufacturer.
 3. Keep flammable materials away from sparks or flame.
 4. Provide masking and drop cloths to prevent contamination of adjacent surfaces by firestopping materials.
 5. Comply with manufacturing recommendations for temperature and humidity conditions before, during and after installation of firestopping.

PART 2 - PRODUCTS

2.1 THROUGH PENETRATION FIRESTOPPING OF FIRE RATED CONSTRUCTION

- A. Systems or devices listed in the U.L. Fire Resistance Directory under categories XHCR and XHEZ may be used, providing that it conforms to the construction type, penetrant type, annular space requirements and fire rating involved in each separate instance, and that the system be symmetrical for wall applications. Systems or devices must be asbestos-free. Mortar systems must be Warnock Hersey approved.
1. Additional requirements: Withstand the passage of cold smoke either as an inherent property of the system, or by the use of a separate product included as a part of the U.L. system or device, and designed to perform this function.
 2. Acceptable manufacturers and products
 - a. Those listed in the U.L. Fire Resistance Directory for the U.L. System involved or Mortar systems approved by Warnock Hersey and as further defined in the Systems and Applications Schedule in Part 3.6 of this section.
 3. All firestopping products must be from a single manufacturer. All trades shall use products from the same manufacturer.

2.2 CONSTRUCTION-GAP FIRESTOPPING OF FIRE-RATED CONSTRUCTION

- A. Firestopping at construction gaps between edges of interior floor construction.
- B. Firestopping at construction gaps between edges of interior wall construction.
- C. Acceptable manufacturers and products - those listed in the U.L. Fire Resistance Directory for the U.L. System involved and as further defined in the Systems and Applications Schedule in Part 3.6 of this section.

2.3 ACCESSORIES

- A. Fill, void or cavity materials: As classified under category XHHW in the U.L. Fire Resistance Directory or Mortars as approved by Warnock Hersey.
- B. Forming materials: As classified under category XHKU in the U.L. Fire Resistance Directory.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Verification of conditions: Examine areas and conditions under which work is to be performed and identify conditions detrimental to proper or timely completion.
 - 1. Verify barrier penetrations are properly sized and in suitable condition for application of materials.
 - 2. Do not proceed until unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Clean surfaces to be in contact with penetration seal materials, of dirt, grease, oil, loose materials, rust, or other substances that may affect proper fitting, adhesion, or the required fire resistance.

3.3 INSTALLATION

- A. Install penetration seal materials in accordance with printed instructions of the U.L. Fire Resistance Directory or Mortars Systems approved by Warnock Hersey and in accordance with manufacturer's instructions.
- B. Seal holes or voids made by penetrations to ensure an effective smoke barrier.
- C. Protect materials from damage on surfaces subject to traffic.
- D. Where large openings are created in walls to permit installation of pipes, ducts, cable tray, bus duct or other items, close unused portions of opening with firestopping material tested for the application. See U.L. Fire Resistance Directory or Warnock Hersey approvals and Section 3.6 of this document.

3.4 FIELD QUALITY CONTROL

- A. Examine penetration sealed areas to ensure proper installation before concealing or enclosing areas.
- B. Keep areas of work accessible until inspection by applicable code authorities.
- C. Perform under this section patching and repairing of firestopping caused by cutting or penetration by other trades.

3.5 ADJUSTING AND CLEANING

- A. Clean up spills of liquid components.
- B. Neatly cut and trim materials as required.
- C. Remove equipment, materials and debris, leaving area in undamaged, clean condition.

3.6 PERFORMANCE

- A. The firestopping work noted in this section shall be performed by the appropriate Sub-Contractor who is responsible for that phase of work he is performing. To wit: Mechanical, Electrical, Gypsum Board, etc.
- B. Firestopping work performed by the referenced Contractor shall be in compliance with the requirements of Section 07 84 00.
- C. The Contractor shall perform firestopping work required at all construction gaps and other locations not covered by specific trades. This requirement is conditioned upon the option noted in Paragraph 3.6 D herein.
- D. At the option of the Contractor, he may award the firestopping work for the entire project to one subcontractor for complete one source responsibility, with all work to be performed in compliance with Section 07 84 00.
- E. For each section of the Specifications for a trade that involves through wall, floor or partition penetrations, the involved Sub-Contractor shall perform firestopping work as specified in Section 07 84 00 and as applicable to the Specification for that trade. This requirement is conditional upon the option noted in Paragraph 3.6D herein.

END OF SECTION 07 84 00

SECTION 07 92 00 – JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Clean and prepare joint surfaces.
 - 2. Sealant Materials.
 - 3. Accessories.

1.3 REFERENCES

- A. ASTM C790 - Recommended Practices for Use of Latex Sealing Compounds.
- B. ASTM C804 - Recommended Practice for Use of Solvent-Release Type Sealants.
- C. ASTM C834 - Standard Specification for Latex Sealant.
- D. ASTM D1056 - Flexible Cellular Materials - Sponge or Expanded Rubber.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants.

1.4 SUBMITTALS

- A. Submit product data and samples under provisions of Section 01 33 00.
- B. Submit samples of sealant colors.
- C. Submit manufacturer's surface preparation and installation instructions under provisions of Section 01 33 00.
- D. Submit copies of material safety data sheets.

1.5 WARRANTY

- A. Provide two year warranty under provisions of Section 01 77 00.
- B. Warranty: Replace sealants which fail because of loss of cohesion or adhesion, or do not cure.

PART 2 - PRODUCTS

2.1 SEALANT MATERIALS

A. Sealant (Type 1):

1. Polyurethane base, single-component, chemical curing; capable of being continuously immersed in water, withstand movement of up to 20 percent of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; uniform, homogeneous, and free from lumps, skins, and coarse particles when mixed; Shore A hardness of minimum 15 and maximum 50; non-staining; non-bleeding; color as selected.
2. Subject to conformance with requirements, provide products produced by one of the following manufacturers:
 - a) "Sikaflex-La", Sika Corporation.
 - b) "Dynatrol I", Pecora.
 - c) "Sonolastic NPI", Sonneborn-Contech, Inc.

B. Silicone (Type 2):

1. 100% Silicone base, single component meeting the requirements of ASTM C920, capable of withstanding movement of up to 25 percent of joint width and satisfactorily applied throughout a temperature range of 40 to 80 degrees F; Shore A hardness of maximum 50; non-staining; color as selected.
2. Subject to conformance with requirements, provide products produced by one of the following manufacturers:
 - a) "Silpruf", General Electric.
 - b) "790 Building Sealant", Dow Corning.
 - c) "Proglaze", Tremco.

C. Acrylic Latex (Type 3):

1. Meeting requirements of ASTM C834.
2. Subject to conformance with requirements, provide products produced by one of the following manufacturers:
 - a) "Acrylic Latex Caulk", Tremco.
 - b) "AC-20" Pecora.
 - c) "Sonolac", Sonneborn-Contech, Inc.

D. Gutter Sealant (Type 4):

1. Meeting requirements of ASTM C-1331.
2. Acceptable products or approved as equal by Architect:
 - a) "Gutter and Flashing Butyl-Flex Rubber Sealant," DAP.
 - b) "Butyl Rubber Sealant," C.R. Lawrence.
 - c) "Butyl Rubber Sealant," Red Devil.

2.2 ACCESSORIES:

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; compatible with joint forming materials.
- C. Joint Filler: ASTM D1565 round, open, cell polyethylene or butyl rubber foam rod; compatible with joint forming materials.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify joint dimensions, physical, and environmental conditions are acceptable to receive work of this Section.
- B. Beginning of installation means acceptance.

3.2 PREPARATION

- A. Clean, prepare, and size joints in accordance with manufacturer's instructions. Remove any loose materials and other foreign matter which might impair adhesion of sealant.
- B. Verify that joint shaping materials and release tapes are compatible with sealant.
- C. Examine joint dimensions and size materials to achieve required width/depth ratios.
- D. Use joint filler to achieve required joint depths, to allow sealants to perform properly.
- E. Use bond breaker where required.

3.3 INSTALLATION

- A. Perform work in accordance with ASTM C804 for solvent release and C790 for latex base sealants.
- B. Install sealant in accordance with manufacturer's instructions.
- C. Apply sealant within recommended temperature ranges. Consult manufacturer when sealant cannot be applied within recommended temperature ranges.
- D. Tool joints concave.
- E. Joints: Free of air pockets, foreign embedded matter, ridges, and sags.

3.4 CLEANING

- A. Remove excess materials adjacent to joints by mechanical means or with oxylol, xylene, or reducer 990 as work progresses to eliminate evidence of spillage or damage to adjacent surfaces.
- B. Remove cured sealant by cutting with a sharp edged tool.
- C. Remove thin films by abrading.

3.5 SCHEDULE

- A. Exterior where Vinyl window meets mineral fiber cement board trim: Type 1.
- B. Exterior where hollow metal door frames meet mineral fiber cement board trim: Type 1.
- C. Interior where hollow metal frame meets gypsum board: Type 3.
- D. Exterior where trim and water table meet concrete: Type 1.

END OF SECTION 07 92 00

SECTION 08 31 13 - ACCESS DOORS

PART 1 – GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Non-fire rated access doors and frames for any access doors required to access Mechanical, Electrical, and/or plumbing items in wall cavities.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Include sizes, types, finishes, scheduled locations, and details of adjoining work.
- C. Submit manufacturer's installation instructions under provisions of Section 01 33 00.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers or approved as equal by Architect:
 - 1. Milcor - Style MS.
 - 2. J. L. Industries - Model TMS.
 - 3. Karp – MC.

2.2 FABRICATION

- A. Fabricate frames and flanges of 16 gauge steel with one inch flange and door panels of 14 gage steel.
- B. Weld, fill, and grind joints to assure flush and square unit.
- C. Hardware: 175 degree steel hinges with pin, cylinder lock with latch, two keys for each unit.
- D. Hinge: Concealed.

2.3 FINISH

- A. Factory prime, painted steel.

2.4 SIZE

- A. As required for access and servicing.

PART 3 – EXECUTION

3.1 INSPECTION

- A. Verify rough openings for door and frame are correctly sized and located.
- B. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

- A. Install frame plumb and level in wall openings.
- B. Position to provide convenient access to concealed work requiring access.
- C. Secure rigidly in place in accordance with manufacturer's instructions.

END OF SECTION 08 31 13

SECTION 08 53 13 - VINYL WINDOWS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Energy Star rated double hung insulated impact resistant vinyl windows with continuous nailing fin at all four sides.

1.3 DEFINITIONS

- A. Performance class designations according to AAMA/WDMA 101/I.S.2/NAFS:
 - 1. R: Residential.
- B. Performance grade number according to AAMA/WDMA 101/I.S.2/NAFS:
 - 1. Design pressure number in pounds force per square foot used to determine the structural test pressure and water test pressure.
- C. Structural Test Pressure: For uniform load structural test, is equivalent to 150 percent of the design pressure.
- D. Minimum Test Size: Smallest size permitted for performance class (gateway test size). Products must be tested at minimum test size or at a size larger than minimum test size to comply with requirements for performance class.

1.4 PERFORMANCE REQUIREMENTS

- A. General: Provide vinyl windows capable of complying with performance requirements indicated, based on testing manufacturer's windows that are representative of those specified, and that are of test size indicated below:
 - 1. Size required by AAMA/WDMA 101/I.S.2/NAFS for gateway performance for optional performance grade.

- B. Structural Performance: Provide vinyl windows capable of withstanding the effects of the following loads, based on testing units representative of those indicated for Project that pass AAMA/WDMA 101/I.S.2/NAFS, Uniform Load Structural Test:
1. Design Wind Loads: Determine design wind loads applicable to Project from basic wind speed indicated in miles per hour at 48 feet above grade, according to Section 6.5.4 ASCE -16, based on mean roof heights above grade indicated on Drawings.
 - a) Basic Wind Speed: 130 mph.
 - b) Importance Factor: 1.0.
 - c) Surface Roughness Category: B.
 - d) Exposure Category: C.
- C. Windborne-Debris Resistance: Provide glazed windows capable of resisting impact from windborne debris, based on the pass/fail criteria as determined from testing glazed windows identical to those specified, according to ASTM E 1886 and testing information in ASTM E 1996 and requirements of authorities having jurisdiction.
1. Wind Zone 4.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00. Include construction details, material descriptions, fabrication methods, dimensions of individual components and profiles, hardware, finishes, and operating instructions for each type of vinyl window indicated.
- B. Submit product data under provisions of Section 01 33 00. Include plans, elevations, sections, details, hardware, attachments to other work, operational clearances, installation details, and the following:
1. Mullion details, including reinforcement and stiffeners.
 2. Joinery details.
 3. Flashing and drainage details.
 4. Weather-stripping details.
 5. Glazing details.
 6. Window cleaning provisions.
For installed products indicated to comply with design loads, include structural analysis data prepared by or under the supervision of a qualified licensed professional engineer registered in Louisiana detailing fabrication and assembly of vinyl windows, and used to determine structural test pressures and design pressures from basic wind speeds indicated.
- C. Samples for Initial Selection: For units with factory-applied color finishes.

1. Include similar samples of hardware and accessories involving color selection.
- D. Product Schedule: For vinyl windows use same designations indicated on Drawings.
- E. Qualification Data: For Installer, manufacturer, professional engineer and testing agency.
- F. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency for each type, class, grade, and size of vinyl window. Test results based on use of downsized test units will not be accepted.
- G. Maintenance Data: For operable window sash, operating hardware, weather stripping and finishes to include in maintenance manuals.
- H. Warranty: Special warranty specified in this Section.

1.6 QUALITY ASSURANCE

- A. Installer Qualifications: An installer acceptable to vinyl window manufacturer for installation of units required for this Project.
- B. Manufacturer Qualifications: A manufacturer capable of fabricating vinyl windows that meet or exceed performance requirements indicated and of documenting this performance by inclusion in lists and by labels, test reports, and calculations.
- C. Source Limitations: Obtain vinyl windows through one source from a single manufacturer.
- D. Product Options: Drawings indicate size, profiles, and dimensional requirements of vinyl windows and are based on the specific system indicated. Do not modify size and dimensional requirements.
 1. Do not modify intended aesthetic effects, as judged solely by Architect, except with Architect's approval. If modifications are proposed, submit comprehensive explanatory data to Architect for review.
- E. Fenestration Standard: Comply with AAMA/WDMA 101/I.S.2/NAFS, "North American Fenestration Standard Voluntary Performance Specification for Windows, Skylights and Glass Doors," for definitions and minimum standards of performance, materials, components, accessories, and fabrication unless more stringent requirements are indicated.

1. Provide AAMA or WDMA-certified vinyl windows with an attached label.

F. Glazing Publications: Comply with published recommendations of glass manufacturers and with GANA's "Glazing Manual" unless more stringent requirements are indicated.

1.7 PROJECT CONDITIONS

A. Field Measurements: Verify vinyl window openings by field measurements before fabrication and indicate measurements on Shop Drawings.

1. Established Dimensions: Where field measurements cannot be made without delaying the Work, establish opening dimensions and proceed with fabricating vinyl windows without field measurements. Coordinate wall construction to ensure that actual opening dimensions correspond to established dimensions.

1.8 WARRANTY

A. Special Warranty: Manufacturer's standard form in which manufacturer agrees to repair or replace vinyl windows that fail in materials or workmanship within specified warranty period.

1. Failures include, but are not limited to, the following:

- a) Failure to meet performance requirements.
- b) Structural failures including excessive deflection, water leakage, air infiltration, or condensation.
- c) Faulty operation of movable sash and hardware.
- d) Deterioration of vinyl, other materials, and finishes beyond normal weathering.
- e) Failure of insulating glass.

2. Warranty Period:

- a) Window: Five (5) years from the date of Substantial Completion.
- b) Glazing: Five (5) years from the date of Substantial Completion.
- c) Vinyl Finish: Five (5) years from date of Substantial Completion.
- d) Glazing Panel Seal: Five (5) years against breakage of the glazing panel seal from the date of Substantial Completion.

PART 2 – PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, provide products produced by the following manufacturers:

1. VIWINCO Ocean View Impact Resistant Vinyl Windows.
P O Box 499
Morgantown, PA 19543
Ph. (610) 286-8884

2.2 MATERIALS

A. Window Style:

1. Single Hung (SH with no grids) and fiberglass screen.
2. All Windows shall have continuous nailing flanges on all four sides.

B. Vinyl Extrusions: Rigid (unplasticized) hollow PVC extrusions, formulated and extruded for exterior applications, complying with AAMA 101/I.S.2.-97/NAFS and the following:

1. PVC Resins: 100 percent virgin resin.
2. PVC Formulation: High impact, low heat buildup, lead free, non-chalking, and color and UV stabilized.
3. Extrusion Wall Thickness: Not less than 0.090 inch.
4. Color: White.

C. Vinyl Trim and Glazing Stops: Material and finish to match frame members.

D. Screens: Manufacturers' standard aluminum screens for the full height of the operable window.

E. Fasteners: Aluminum, nonmagnetic stainless steel, epoxy adhesive, or other materials warranted by manufacturer to be noncorrosive and compatible with vinyl window members, cladding, trim, hardware, anchors, and other components.

1. Exposed Fasteners: Unless unavoidable for applying hardware, do not use exposed fasteners. For application of hardware, use fasteners that match finish of member or hardware being fastened, as appropriate.

F. Anchors, Clips, and Accessories: Aluminum, nonmagnetic stainless steel, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

G. Reinforcing Members: Aluminum, or nonmagnetic stainless steel, or nickel/chrome-plated steel complying with ASTM B 456 for Type SC 3 severe service conditions, or zinc-coated steel or iron complying with ASTM B 633 for SC 3 severe service conditions; provide sufficient strength to withstand design pressure indicated.

- H. Compression-Type Weather Stripping: Provide EPDM compressible weather stripping designed for permanently resilient sealing under bumper action under the lower lift rail and for complete concealment when vinyl window is closed.
 - 1. Provide weather stripping with integral barrier fin or fins of semi-rigid polypropylene.

2.3 WINDOW

- A. Window Type: Thermally broken double hung, with removable tilt-in sashes and a minimum of 1-1/2 inch wide vinyl nailing fin around window perimeter with elongated fastener holes at 4 inches maximum on center.
- B. AAMA/WDMA Performance Requirements: Provide vinyl windows of performance indicated that comply with AAMA 101/I.S.2-97 unless more stringent performance requirements are required by the authorities having jurisdiction.
 - 1. Performance Class and Grade: R40.
- C. Condensation-Resistance Factor (CRF): Provide vinyl windows tested for thermal performance according to AAMA 1503, showing a CRF of 58.
- D. Thermal Transmittance: Provide vinyl windows with a whole-window, U-factor maximum indicated at 15-mph exterior wind velocity and winter condition temperatures when tested according to AAMA 1503.
 - 1. U-Factor: Less than or equal to 0.28 as determined by NFRC (National Fenestration Ratings Council).
- E. Solar Heat-Gain Coefficient (SHGC): Provide vinyl windows with a whole-window SHGC maximum of 0.28 or less, determined according to NFRC 200 procedures.
- F. Sound Transmission Class (STC): Provide glazed windows rated for not less than 30 STC when tested for laboratory sound transmission loss according to ASTM E 90 and determined by ASTM E 413.
- G. Forced-Entry Resistance: Comply with Performance Grade 30 or better requirements when tested according to ASTM F 588.
- H. Operating Force and Auxiliary (Durability) Tests: Comply with AAMA/WDMA 101/I.S.2/NAFS for operating window types indicated.

2.4 GLAZING

- A. Glass/Glazing: All Glass/Glazing shall be glazed at the factory.

- B. Glass: Laminated Solarban 60, dual sealed insulating-glass units, argon gas filled, with low-E coating sputtered on third surface, complying with the following:
 - 1. All units shall be structurally glazed to withstand a 70 PSF design pressure, large and small missile impact.
 - 2. Exterior lite shall be 1/4" thick clear laminated and of sufficient strength to meet large missile impact, wind loading and applicable codes.
 - 3. Interior lite shall be clear 1/8" thick low E and of sufficient strength to meet loading and applicable codes.

2.5 HARDWARE

- A. General: Provide manufacturer's standard hardware fabricated from aluminum, stainless steel, carbon steel complying with AAMA 907, or other corrosion-resistant material compatible with vinyl; designed to smoothly operate, tightly close, and securely lock vinyl windows, and sized to accommodate sash or ventilator weight and dimensions. Do not use aluminum in frictional contact with other metals. Where exposed, provide die-cast zinc with special coating finish.
- B. Counterbalancing Mechanism: Comply with AAMA 902.
 - 1. Sash-Balance Type: Concealed, spiral-tube type, of size and capacity to hold sash stationary at any open position.

2.6 FABRICATION

- A. Fabricate vinyl windows in sizes indicated. Include a complete system for assembling components and anchoring windows.
 - 1. Welded Frame and Sash/Ventilator Corners: Miter-cut and fusion or chemically welded.
- B. Fabricate vinyl windows that are re-glazable without dismantling sash or ventilator framing.
- C. Weather Stripping: Provide full-perimeter weather stripping for each operable sash and ventilator, unless otherwise indicated.
- D. Factory-Glazed Fabrication: Except Glaze vinyl windows in the factory. Comply with requirements of AAMA 101/I.S.2-97.
- E. Glazing Stops: Provide snap-on glazing stops to match sash and ventilator frames.

- F. Hardware: Mount hardware through double walls of vinyl extrusions or provide corrosion resistant.
- G. Complete fabrication, assembly, finishing, hardware application, and other work in the factory to greatest extent possible. Disassemble components only as necessary for shipment and installation. Allow for scribing, trimming, and fitting at Project site.

2.7 VINYL FINISHES

- A. Integral Finish and Color: Uniform, solid, homogeneous white interior and exterior.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine openings, substrates, structural support, anchorage, and conditions, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of work. Verify rough opening dimensions, levelness of sill plate, and operational clearances. Examine wall flashings, vapor retarders, water and weather barriers, and other built-in components to ensure a coordinated, weathertight window installation.
 - 1. Wood Frame Walls: Dry, clean, sound, well nailed, free of voids, and without offsets at joints. Ensure that nail heads are driven flush with surfaces in opening and within 3 inches of opening.
 - 2. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 INSTALLATION

- A. Comply with Drawings, Shop Drawings, and manufacturer's written instructions for installing windows, hardware, accessories, and other components.
- B. Install windows level, plumb, square, true to line, without distortion or impeding thermal movement, anchored securely in place to structural support, and in proper relation to wall flashing and other adjacent construction.
- C. Set sill members in bed of sealant or with gaskets, as indicated, for weathertight construction.
- D. Separate corrodible surfaces from sources of corrosion or electrolytic action at points of contact with other materials.

3.3 ADJUSTING, CLEANING, AND PROTECTION

- A. Adjust operating sashes, screens, hardware, and accessories for a tight fit at contact points and weather stripping for smooth operation and weathertight closure. Lubricate hardware and moving parts.
- B. Clean exposed surfaces immediately after installing windows. Avoid damaging protective coatings and finishes. Remove excess sealants, glazing materials, dirt, and other substances.
- C. Clean factory-glazed glass immediately after installing windows. Comply with manufacturer's written recommendations for final cleaning and maintenance. Remove nonpermanent labels, and clean surfaces.
- D. Remove and replace glass that has been broken, chipped, cracked, abraded, or damaged during construction period.
- E. Protect window surfaces from contact with contaminating substances resulting from construction operations. In addition, monitor window surfaces adjacent to and below exterior masonry surfaces during construction for presence of dirt, scum, alkaline deposits, stains, or other contaminants. If contaminating substances do contact window surfaces, remove contaminants immediately according to manufacturer's written recommendations.

END OF SECTION 08 53 13

SECTION 09 21 16 - GYPSUM BOARD SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Condition of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:

1.3 REFERENCES

- A. GA 201 - Gypsum Board for Walls and Ceilings.
- B. GA 216 - Recommended Specifications for the Application and Finishing of Gypsum Board.
- C. ASTM C36 - Gypsum Wallboard.
- D. ASTM C442 - Gypsum Backing Board, Gypsum Coreboard, and Gypsum Shaftliner Board.
- E. ASTM C475 - Joint Treatment Materials for Gypsum Wallboard Construction.
- F. ASTM C646 - Steel Drill Screws for the Application of Gypsum Sheet Material to Light Gage Steel Studs.
- G. ASTM C754 - Installation of Framing Members to Receive Screw Attached Gypsum Wallboard, Backing Board, or Water Resistant Backing Board.
- H. ASTM C840 – Application and finishing of Gypsum board.
- I. ASTM C1396 – Gypsum Board.
- J. ASTM C630 – Water-resistant Gypsum Backing Board.

1.4 QUALITY ASSURANCE

- A. Perform gypsum board and related work in accordance with the referenced ASTM Sections GA 201, GA 216, and the Gypsum Board Construction Handbook, latest edition unless otherwise specified in this Section.
- B. Keep copy of GA 201, GA 216, and the Gypsum Board Construction Handbook, latest edition in the field office for duration of project.

1.4 SUBMITTALS

- A. Submit shop drawings and product data under provisions of Section 01 33 00.
- B. Submit manufacturer's instructions under provisions of Section 01 33 00.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Gypsum Wall Board:
 - a) United States Gypsum Co.
 - b) National Gypsum Co.
 - c) George-Pacific Corporation
 - 2. Gypsum Wall Board Accessories (Corner bead):
 - a) United States Gypsum Co.
 - b) National Gypsum Co.

2.2 GYPSUM WALL BOARD

- A. Provide gypsum board materials in accordance with recommendations of recommendations of GA 216.
- B. Typical gypsum board to be used at un-rated walls and ceilings: Regular gypsum board, 1/2" thick.
- C. Fire Rated Gypsum Board: Fire Code C core gypsum board; fire and UL rated ASTM C630; 5/8 inch thick, maximum permissible length; ends square cut, tapered edges.
- D. Fire Rated Moisture Resistant Gypsum Board: Fire Code core gypsum board ASTM C36; moisture resistant type, 1/2 inch thick, maximum permissible length, ends square cut, tapered edges.

2.3 GYPSUM WALL BOARD ACCESSORIES

- A. Provide gypsum board accessories in accordance with recommendations of GA 216.
- B. Corner Beads: 1-1/8" x 1-1/8" Wide x .013" Galvanized Type; United States Gypsum Co. Dur-a-Bead or Gold Bond Building Products Wallboard Corner Bead conforming to ASTM C1047.

- C. Reinforcing Tape, Joint Compound, Adhesive, Water, Fasteners: comply with GA 216.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify that site conditions are ready to receive work and opening dimensions are as instructed by the manufacturer.
- B. Beginning of installation means acceptance of substrate.

3.2 GYPSUM BOARD INSTALLATION

- A. Install gypsum board in accordance with recommendations of GA 201, GA 216, and the Gypsum Board Construction Handbook, latest edition.
- B. Erect single layer fire rated gypsum board vertically, with edges and ends occurring over firm bearing.
- C. Use screws when fastening gypsum board to wood framing.
- D. Treat cut edges and holes in moisture resistant gypsum board with sealant.
- E. Place corner beads at all external corners. Use longest practical lengths. Place edge trim where gypsum board abuts dissimilar materials and at control joints.
- F. Tape, fill, and sand exposed joints, edges, corners, openings and fixtures, to produce a **“Level 4”** surface ready to receive finishes. Feather coats onto adjoining surfaces so that camber is maximum 1/32 inch.
- G. Remove and re-do defective work.

3.3 TOLERANCES

- A. Maximum Variation from True Flatness: 1/8 inch in 10 feet in any direction.

END OF SECTION 09 21 16

SECTION 09 91 13 – PAINTING (EXTERIOR)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Prepare exterior surfaces which are to receive a painted finish as indicated in schedule at end of this section.
 - 2. Finish painted surfaces as indicated in schedule at end of his section.

1.3 REFERENCES

- A. ASTM 16D - Definition of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

1.4 DEFINITIONS

- A. Conform to ASTM 16D - Definition of terms relating to Paint, Varnish, Lacquer and Related Products.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Provide product data on all finishing products.
- C. Submit manufacturer's application instructions under provisions of Section 01 33 00.
- D. Colors to be selected by Architect and approved by the Owner prior to commencement of work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver paint materials under provisions of Section 01 66 00 in sealed original labeled containers, bearing manufacturer's name, type of paint, brand name, color designation, and instructions for mixing and/or reducing.

- B. Provide adequate storage facilities. Store paint materials at minimum ambient temperature of 45 degrees F and maximum of 90 degrees F in well ventilated area.
- C. Take precautionary measures to prevent fire hazards and spontaneous combustions.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture contents of surfaces are below the following maximums:
 - 1. Wood: 10 percent.
- B. Ensure surface temperatures or the surrounding air temperature is above 40 degrees F before applying finishes. Minimum application temperatures for latex paints for interior work is 45 degrees F and 50 degrees F for exterior work. Minimum application temperature for varnish and stain finishes is 65 degrees F.
- C. Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures above 45 degrees F for 24 hours before, during and 48 hours after application of finishes.
- D. Provide minimum 25 foot candles of lighting on surfaces to be finished.
- E. **THE USE OF SPRAY PAINTING EQUIPMENT AND PAINT ROLLERS FOR EXTERIOR PAINTING SHALL NOT BE PERMITTED. ALL PAINTING SHALL BE DONE BY THE USE OF BRUSHES EXCEPT AS NOTED. CIGAR ROLLERS ARE PERMITTED TO BE USED AT FERROUS METALS.**

1.8 EXTRA STOCK

- A. Provide not less than two (2) gallons of each color used.
- B. Containers shall be tightly sealed and clearly labeled for identification.

1.9 SURFACES TO BE PAINTED

- A. Ferrous Metals: All surfaces exposed to view and to the weather.
- B. New insulated steel doors and hollow metal door frames.
- C. Mineral fiber cement board and trim.
- D. PVC trim.

- E. All surfaces, not specifically mentioned, which normally receive paint and have not, prior to erection, received a factory finish and are exposed to view or to the weather, shall receive finish equal in type of paint and number of coats, to that called for on similar surfaces.

1.10 SURFACES NOT TO BE PAINTED

- A. Finished metal surfaces of anodized aluminum, stainless steel, chrome plate, copper, bronze and similar finished metals, except as specifically listed in the Painting Schedules.
- B. Ramps and other traffic surfaces.
- C. Prefinished metal downspouts and gutters and roofing trim.
- D. New chain link fencing and gates.
- E. Vinyl windows.
- F. PVC conduit and PVC electrical boxes.
- G. Entergy electrical meters including electrical panel board boxes and disconnects.
- H. HVAC condensing units.
- I. Metal roof vents.
- J. Building signage.
- K. Glass surfaces.
- L. Hot-dipped galvanized items.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - PRIMER (EXTERIOR)

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Ferrous Metal:
 - a) Sherwin Williams Co. – Kem Kromik® Universal Metal Primer, B50NZ6 Series.
 - b) Glidden – 4180 Series Universal Metal Primer.
 - c) Benjamin Moore & Co. – Product No. Mo6, Alkyd Metal Primer.

B. Subject to compliance with requirements, provide products produced by one of the following manufacturers.

1. Mineral Fiber Cement Siding, Trim, and PVC trim:

- a) Sherwin-Williams Co. Loxon® Concrete and Masonry Acrylic Primer, A24W300.
- b) ICI Dulux Paints - 3210 1200 Gripper.

2.2 MANUFACTURERS - PAINT (EXTERIOR)

A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:

1. Ferrous Metal:

- a) Sherwin-Williams Co. - Industrial Urethane Alkyd Enamel B54 – 150 Series.
- b) Glidden – 4308 Series, Alkyd Industrial Enamel.
- c) Benjamin Moore & Co. – Product No. P22, Alkyd Industrial Metal Urethane Enamel.

B. Subject to compliance with requirements, provide products produced by one of the following manufacturers:

1. Mineral Fiber Cement Siding, Trim and PVC trim:

- a) Sherwin-Williams Co. - Super Paint® Exterior Flat Latex, A80 Series, A80W51.
- b) Benjamin Moore, Element Guard.
- c) ICIC Dulux Paints - Duras 2200.

2.3 MATERIALS

A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.

B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.

C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Thoroughly examine surfaces scheduled to be painted prior to commencement of work. Report in writing to the Architect, any condition that may potentially affect proper application. Do not commence until such defects have been corrected.
- B. Correct defects and deficiencies in surfaces which may adversely affect work of this Section.

3.2 PROTECTION

- A. Adequately protect other surfaces from paint and damage. Repair damage as a result of inadequate or unsuitable protection.
- B. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being painted and in particular, surfaces which storage and preparation area.
- C. Place cotton waste, cloths, and material which may constitute a fire hazard in closed metal containers and remove daily from site.
- D. Remove electrical plates, surface hardware, fittings and fastenings, prior to painting operations. These items are to be carefully stored, cleaned, and replaced on completion of work in each area. Do not use solvent to clean hardware that may remove permanent lacquer finish.

3.3 PREPARATION

- A. Comply with manufacturer's written instructions and recommendations in "MPI Architectural Painting Specification Manual" applicable to substrates and paint systems indicated.
- B. Remove existing sealant where wood or metal surfaces meet masonry surfaces prior to scraping and sanding items to be painted.
- C. Clean substrates of substances that could impair bond of paints, including dirt, oil, grease, and incompatible paints and encapsulates.
- D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.
- E. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

- F. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.
- G. Fill holes, checks in wood sills and other imperfections wood surfaces with resin bonding agent and exterior epoxy filler in accordance with the manufacturers instructions. Smooth off and sand smooth to match adjacent surfaces.
- H. Remove grease, rust, scale, dirt, and dust from steel and iron surfaces. Where heavy coatings of scale are evident, removed by wire brushing, grinding, or any other necessary method. Ensure steel surfaces are satisfactory before paint finishing.
- I. Clean unprimed steel surfaces by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts and nuts are similarly cleaned. Prime surfaces to indicate defects, if any. Paint after defects have been remedied.
- J. Sand and scrape existing steel surfaces to remove all existing paint and rust. Clean surfaces with solvent. Prime bare steel surfaces.
- K. Sand and scrape existing wood surfaces to bare wood. Clean surfaces prior to priming raw wood surfaces with primer.

3.4 APPLICATIONS

- A. Apply each coat at proper consistency.
- B. Each coat of paint is to be slightly darker than preceding coat unless otherwise approved by the Architect.
- C. Sand lightly between coats to achieve required finish.
- D. Do not apply finishes on surfaces that are not sufficiently dry.
- E. Allow each coat of finish to dry before following coat is applied, unless directed otherwise by manufacturer.
- F. Prime and paint top and edges of insulated steel doors.

3.5 CLEANING

- A. As work proceeds and upon completion, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of work, keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.

- C. Upon completion of work, leave premises neat and clean, to the satisfaction of Architect.

3.6 PAINTING AND FINISHING SCHEDULE (EXTERIOR)

A. Ferrous Metal:

- 1. Paint Finish - 1 coat alkyd primer.
- 2. Paint Finish - 2 coats alkyd gloss finish.

B. Mineral Fiber Cement Siding, Trim and PVC Trim:

- 1. Paint Finish - 1 coat acrylic latex primer.
- 2. Paint Finish - 2 coats acrylic latex, flat finish.

END OF SECTION 09 91 13

SECTION 09 91 23 – PAINTING (INTERIOR)

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Prepare new interior surfaces which are to receive a painted finish.
 - 2. Finish painted interior surfaces as indicated in schedule at end of this Section.

1.3 REFERENCES

- A. ASTM 16D - Definition of Terms Relating to Paint, Varnish, Lacquer, and Related Products.

1.4 DEFINITIONS

- A. Conform to ASTM 16D - Definition of terms relating to Paint, Varnish, Lacquer and Related Products.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Provide product data on all finishing products.
- C. Submit manufacturer's application instructions under provisions of Section 01 33 00.
- D. Colors to be selected by Architect and approved by the Owner prior to commencement of work.

1.6 DELIVERY, STORAGE, AND HANDLING

- A. Deliver paint materials under provisions of Section 01 60 00 in sealed original labeled containers, bearing manufacturer's name, type of paint, brand name, color designation, and instructions for mixing and/or reducing.

- B. Provide adequate storage facilities. Store paint materials at minimum ambient temperature of 45 degrees F and maximum of 90 degrees F in well ventilated area.
- C. Take precautionary measures to prevent fire hazards and spontaneous combustions.

1.7 ENVIRONMENTAL REQUIREMENTS

- A. Measure moisture content of surfaces using an electronic moisture meter. Do not apply finishes unless moisture contents of surfaces are below following maximums:
 - 1. Plaster and gypsum wallboard: 12 percent.
- B. Ensure surface temperatures or the surrounding air temperature is above 40 degrees F before applying finishes. Minimum application temperatures for latex paints for interior work is 45 degrees F and 50 degrees F for exterior work. Minimum application temperature for varnish and stain finishes is 65 degrees F.
- C. Provide adequate continuous ventilation and sufficient heating facilities to maintain temperatures above 45 degrees F for 24 hours before, during and 48 hours after application of finishes.
- D. Provide minimum 25 foot candles of lighting on surfaces to be finished.

1.8 EXTRA STOCK

- A. Provide not less than two (2) gallons of each color used.
- B. Containers to be tightly sealed and clearly labeled for identification.

1.9 SURFACES TO BE PAINTED

- A. Gypsum Board: All surfaces exposed to view unless specifically designated "UNPAINTED" in the Finish Schedule.
- B. Wood Trim: All surfaces exposed to view unless specifically designated "UNPAINTED" in the Finish Schedule.
- C. Ferrous Metals: All surfaces exposed to view unless specifically designated "UNPAINTED" in the Finish Schedule.
- D. All hangers, steel and iron work, and primed metal surfaces of equipment installed under the mechanical and electrical divisions exposed to view, except as otherwise specified.

- E. All surfaces, not specifically mentioned, which normally receive paint and have not, prior to erection, received factory finish and are exposed to view or to the weather, shall receive finish equal in type of paint and number of coats, to that called for on similar surfaces.

1.10 SURFACES NOT TO BE PAINTED

- A. The following surfaces are not to be painted:
 - 1. Surfaces above suspended ceilings, furred areas, in pipe spaces and chases, duct shafts, and similar concealed and inaccessible areas. EXCEPTION: Pipe hangers, structural steel, and non-galvanized miscellaneous metal work shall be painted for corrosion protection.
 - 2. Finished metal surfaces of anodized aluminum, stainless steel, chrome plate, copper, bronze and similar finished metals, except as specifically listed in the Painting Schedules.
- B. Moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sensing devices, and motor and fan shafts.
- C. Vinyl windows.
- D. Name plates and labels, such as code-required U.L. and F.M. labels, and equipment identification, performance rating, instructions and nomenclature plates.
- E. Ramps and other traffic surfaces.
- F. Vinyl base.
- G. Concrete floor slabs.
- H. Concrete floor slabs.
- I. Panel signage.
- J. Overhead coiling doors, rails, brackets, coil housing and chain.
- K. Door Hardware.
- L. Light Fixtures.
- M. Plumbing Fixtures.
- N. Water Heaters.
- O. Factory-finished surfaces, unless otherwise noted.

PART 2 - PRODUCTS

2.1 MANUFACTURERS - PRIMER (INTERIOR)

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Gypsum Board and Wood:
 - a) Sherwin-Williams Co. - ProGreen™ 200 Low VOC Interior Latex Primer, B28W600.
 - b) ICI Dulux Paints – Lifemaster™ 2000 Interior Latex primer-Sealer, LM 9116.

- B. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Ferrous Metal:
 - a) Sherwin-Williams Co.- Pro-Industrial Pro-Cryl Universal Acrylic Primer, B66-310 Series.
 - b) ICI Dulux Paints- 4020 Devflex Direct-To-Metal primer and flat finish, low to no VOC/ low odor acrylic latex.

2.2 MANUFACTURERS - PAINT (INTERIOR)

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Gypsum Board and Wood:
 - a) Sherwin-Williams Co. – ProGreen™ 200 Low Voc Interior Latex Eg-Shel, B20-600 Series, B20W00651.
 - b) Benjamin Moore, Regal Select.
 - c) ICI Dulux Paints – GreenGuard® Certified 9300 Dulux Lifemaster Eggshell Interior Enamel, No VOC/Low Odor Acrylic Latex.

- B. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Ferrous Metals:
 - a) Sherwin-Williams Co.- Pro-Industrial VOC Acrylic B66-600 Series, Semi-gloss.
 - b) ICI Dulux Paints- Green Guard® Certified 9400 Dulux Lifemaster Semi-gloss Interior Enamel, low to no VOC/low odor acrylic latex.

2.3 MATERIALS

- A. Coatings: Ready mixed, except field catalyzed coatings. Process pigments to a soft paste consistency, capable of being readily and uniformly dispersed to a homogeneous coating.
- B. Coatings: Good flow and brushing properties; capable of drying or curing free of streaks or sags.
- C. Accessory Materials: Linseed oil, shellac, turpentine, paint thinners and other materials not specifically indicated but required to achieve the finishes specified, of commercial quality.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Thoroughly examine surfaces scheduled to be painted prior to commencement of work. Report in writing to the Architect, any condition that may potentially affect proper application. Do not commence until such defects have been corrected.
- B. Correct defects and deficiencies in surfaces which may adversely affect work of this Section.

3.2 PROTECTION

- A. Adequately protect other surfaces from paint and damage. Repair damage resulting from inadequate or unsuitable protection.
- B. Furnish sufficient drop cloths, shields, and protective equipment to prevent spray or droppings from fouling surfaces not being painted and in particular, surfaces which storage and preparation area.
- C. Place cotton waste, cloths, and material which may constitute a fire hazard in closed metal containers and remove daily from site.
- D. Remove electrical plates, surface hardware, fittings and fastenings, prior to painting operations. These items are to be carefully stored, cleaned, and replaced on completion of work in each area. Do not use solvent to clean hardware that may remove permanent lacquer finish.

3.3 PREPARATION

- A. Remove mildew, by scrubbing with solution of trisodium phosphate and bleach. Rinse with clean water and allow surface to dry completely.

- B. Remove surface contamination from aluminum surfaces requiring a paint finish by steam, high pressure water, or solvent washing. Apply etching primer or acid etch. Apply paint immediately if acid etching.
- C. Remove dirt, grease and oil from canvas and cotton insulated coverings.
- D. Remove contamination, acid etch, and rinse new concrete floors with clear water. Ensure required acid-alkali balance is achieved. Allow to thoroughly dry.
- E. Remove contamination from gypsum board surfaces and prime to show defects, if any. Paint after defects have been remedied.
- F. Remove surface contamination and oils from galvanized surfaces and wash with solvent. Apply coat of etching type primer.
- G. Remove surface contamination and oils from zinc coated surfaces and prepare for priming in accordance with metal manufacturer's recommendations.
- H. Remove dirt, loose mortar, scale, powder, and other foreign matter from concrete and concrete block surfaces which are to be painted or to receive a clear seal. Remove oil and grease with a solution of trisodium phosphate, rinse well and allow to thoroughly dry.
- I. Remove stains from concrete and concrete block surfaces caused by weathering of corroding metals with a solution of sodium metasilicate after being thoroughly wetted with water. Allow to thoroughly dry.
- J. Fill hairline cracks, small holes, and imperfections on plaster surfaces with patching plaster. Smooth off to match adjacent surfaces. Wash and neutralize high alkali surfaces where they occur.
- K. Remove grease, rust, scale, dirt, and dust from steel and iron surfaces. Where heavy coatings of scale are evident, removed by wire brushing, sandblasting, or any other necessary method. Ensure steel surfaces are satisfactory before paint finishing.
- L. Clean unprimed steel surfaces by washing with solvent. Apply a treatment of phosphoric acid solution, ensuring weld joints, bolts and nuts are similarly cleaned. Prime surfaces to indicate defects, if any. Paint after defects have been remedied.
- M. Sand and scrape shop primed steel surfaces to remove loose primer and rust. Feather out edges to make touch-up patches inconspicuous. Clean surfaces with solvent. Prime bare steel surfaces.
- N. Sand and scrape existing wood surfaces to bare wood. Clean surfaces prior to priming raw wood surfaces with primer.

3.4 APPLICATIONS

- A. Apply each coat at proper consistency.
- B. Do not apply finishes on surfaces that are not sufficiently dry.
- C. Allow each coat of finish to dry before following coat is applied, unless directed otherwise by manufacturer.
- D. Prime and paint top and bottom edges of ferrous metal doors with latex undercoat.

3.5 MECHANICAL AND ELECTRICAL EQUIPMENT

- A. Refer to mechanical and electrical Sections with respect to painting and finishing requirements, color coding, and identification banding of equipment, ducting, piping and conduit.
- B. Remove grilles, covers, and access panels for mechanical and electrical systems from location and paint separately.
- C. Finish paint equipment located in finished areas which is normally furnished with a prime coat by manufacturer.
- D. Prime and paint insulated and bare pipes, conduits, boxes, insulated and bare ducts, hangers, brackets, collars and supports, except where items are plated or covered with a pre-finished coating.
- E. Replace identification markings on mechanical or electrical equipment when painted over or spattered.
- F. Paint interior surfaces of air ducts, convector and baseboard heating cabinets that are visible through grilles and louvers with one coat of flat black paint, to limit of sight line. Paint dampers exposed immediately behind louvers, grilles, convector and baseboard cabinets to match face panels.
- G. Paint exposed conduit and electrical equipment occurring in finished areas. Color and texture to match adjacent surfaces.
- H. Paint exposed surface of plywood backboards for electrical equipment.
- I. Color code equipment, piping, conduit and exposed ductwork in accordance with requirements indicated.
- J. Allow paint to dry at least 48 hours prior to installing electrical device cover plates on painted surfaces.

3.6 CLEANING

- A. As work proceeds and upon completion, promptly remove paint where spilled, splashed, or spattered.
- B. During progress of work, keep premises free from any unnecessary accumulation of tools, equipment, surplus materials, and debris.
- C. Upon completion of work, leave premises neat and clean, to the satisfaction of Architect.

3.7 PAINTING AND FINISHING SCHEDULE (INTERIOR)

- A. Gypsum Board: Walls
 - 1. Paint Finish - 1 coat acrylic latex primer/sealer.
 - 2. Paint Finish - 2 coats acrylic latex eggshell finish.
- B. Gypsum Board: Ceilings
 - 1. Paint Finish – 1 coat acrylic latex primer/sealer.
 - 2. Paint Finish – 2 coats acrylic latex eggshell finish.
- C. Wood: Trim
 - 1. Paint Finish – 1 coat acrylic latex primer/sealer.
 - 2. Paint Finish – 2 coats acrylic latex semi-gloss finish.
- D. Ferrous Metal:
 - 1. Paint Finish- 1 coat acrylic primer
 - 2. Paint Finish- 2 coats acrylic latex semi-gloss finish.

END OF SECTION 09 91 23

SECTION 11 30 13 – RESIDENTIAL APPLIANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Range Hood, Vented.

1.3 QUALITY ASSURANCE

- A. Fabricator: Companies specializing in the manufacture of residential and commercial appliances for a minimum of 20 years.

1.4 REGULATORY REQUIREMENTS

- A. Appliances: Listed by Underwriters Laboratories, Inc. (UL).
- B. Electrical Wiring and Components: Conform to Underwriters Laboratories, Inc. (UL) standards.

1.5 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.

1.6 OPERATION AND MAINTENANCE DATA

- A. Submit operation and maintenance data under provisions of Section 01 78 20.
- B. Include data on care of finished surfaces.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Deliver products to site under provisions of Section 01 66 00.
- B. Store products under provisions of Section 01 66 00.
- C. Store products clear of floor in a manner to prevent warping, twisting, or sagging.
- D. Coordinate size of access and route to place of installation.

1.8 WARRANTY

- A. Provide manufacturer's warranty under provisions of Section 01 78 23.
- B. Warranty: Include coverage of scheduled equipment, including disconnection of defective/damaged unit, and connection of replacement unit.

PART 2 - PRODUCTS

2.1 APPLIANCE(S) AND RELATED ACCESSORIES

- A. Subject to compliance with the requirements, provide products as described below or approved as equal by Architect.
 - 1. Range Hood, Vented:
 - a) 30" wide hoods: Economy Collection Model F403004, stainless steel finish, manufactured by Broan® (Broan-Nu Tone LLC)
 - b) 36" wide hoods: Economy Collection Model F403604, stainless steel finish, manufactured by Broan® (Broan-Nu Tone LLC)
 - c) Provided with washable and reusable filters, labeled as dishwasher safe.
 - d) Provided with lamp sockets.
 - e) Provide compatible Energy Star® LED lamps at all appliance lamp sockets.
 - 2. Refrigerator:
 - a) Frigidaire FFHT1822UV, stainless steel finish.
 - 3. Range:
 - a) Whirlpool WFES3030RS, stainless steel finish, freestanding.
 - 4. Dishwasher:
 - a) Amana ADFS2524RZ, stainless steel finish.
 - 5. Laundry Washer & Dryer Set:
 - a) Manufactured by Samsung.
 - b) Washer: Model WF45T6000AW, 4.5 cubic foot capacity.
 - c) Dryer: Model DVE45T6000W, 7.5 cubic foot capacity, electric.
 - d) Washer and dryer shall be designed for use side-by-side or stacked.
 - e) Where Floor Plans show the washer and dryer stacked, provide Model SKK-8K stacking kit.
 - f) Provide recessed-in-wall washer hook-ups unit with drain, hot water supply, and cold water supply.
 - 6. Water Heater, Electric:
 - a) AO Smith 100 Series with 6-year warranty or equal.
 - b) At 1-bedroom living units, provide 30 gallon minimum size.
 - c) At 2-bedroom living units, provide 40 gallon minimum size.
 - d) At 3-bedroom living units, provide 50 gallon minimum size.
 - e) At 4-bedroom (or more) living units, provide 55 gallon minimum size.

- f) Install each water heater on an emergency overflow drain pan, American Built model #WHP22GS-1D, 24" X24". Provide emergency overflow drain pipe from overflow pan to the exterior of the building.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify service connections are correct and in required location. Verify fit.
- B. Beginning of installation means acceptance of existing conditions.

3.2 INSTALLATION

- A. Install items in accordance with manufacturer's instructions and all applicable Codes and regulations.
- B. Provide all materials required for installation in accordance with Manufacturer's instructions and recommendations.
- C. Sequence installation and erection to ensure mechanical and electrical connections are achieved in an orderly and expeditious manner.
- D. Ventilate range hood vent to exterior. Provide metal ductwork through wall cabinet, attic, and roof. Provide metal roof-top vent cap.
- E. At handicap accessible living units, wire hood vent and lights to the existing wall switches

3.3 ADJUSTING AND CLEANING

- A. Adjust equipment and apparatus to ensure proper working order and conditions.
- B. Remove masking or protective covering from stainless steel and other finished surfaces.
- C. Adjust or replace items creating excessive noise.
- D. Clean appliance(s) and accessory materials.
- E. Leave any UL labels and similar labels of certification on the appliance(s).

END OF SECTION 11 30 13

SECTION 12 21 13 – VINYL HORIZONTAL BLINDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Operating vinyl venetian blinds, with 1 inch slats, installed at all operable windows. Blind assemblies shall be sized to fit the windows at which they are installed.

1.3 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Submit manufacturer's installation instructions under provisions of Section 01 33 00.
- C. Submit samples under provisions of Section 01 33 00.
- D. Provide 6 inch blind slat samples indicating manufacturer's full range of standard colors for selection.

1.4 DELIVERY, STORAGE, AND HANDLING

- A. Deliver blinds to site wrapped and crated in a manner to prevent damage to components or marring of surfaces.
- B. Store in a clean, dry area, laid flat and blocked off ground to prevent sagging, twisting or warping.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Subject to compliance with requirements, provide products produced by one of the following manufacturers:
 - 1. Graber
 - 2. Bali

2.2 MATERIALS

- A. Slats: 1 inch wide vinyl.
- B. Cords: Braided nylon, ends heat-faced, and terminated with a plastic tassel. Provide anti-strangulation safety device.
- C. Tilting Device: Plastic wand located on the left side.
- D. Lifting Cord Locks: Locate on the side opposite the tilting device enabling the blind to stop at any height of the window opening.
- E. Head: Aluminum.
- F. Manufacturer: Bali 1” Vinyl Plus.
- G. Color: As selected by Architect and approved by Owner from manufacturer’s standard colors.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Install blinds in accordance with manufacturer's instructions.
- B. Adjust for smooth and proper operation.

END OF SECTION 12 21 13

SECTION 12 35 30 – CABINETS, COUNTERTOPS, AND BACKSPLASHES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Removal of existing cabinets, countertops, and backsplashes.
 - 2. New kitchen cabinets, countertops, and backsplashes.
 - 3. Accessory materials and related work.

1.3 REFERENCES

- A. Reference Standards:
 - 1. Cabinets:
 - a. HUD Minimum Property Standards for Housing, 1984 Edition (with changes).
 - b. ANSI/KCMA A161.1 – Recommended Performance and Construction Standards for Kitchen and Vanity Cabinets, 1990.
 - c. Plywood:
 - 1) ANSI/HPMA HP – Hardwood and Decorative Plywood, 1983.
 - 2) US Product Standard PS 1-83 – Softwood Plywood, Construction and Industrial.
 - 2. Cabinet Hardware: ANSI/BHMA A156.0 Cabinet Hardware, 1988.
 - 3. Joint Sealant:
 - a. Federal Specification (FS) TT-S-001543A – Sealing Compound: Silicone Rubber Base (For Caulking, Sealing, and Glazing in Buildings and other Structures).
 - b. ASTM C920 – Elastomeric Joint Sealants.
 - 4. Certification:
 - a. ANSI Z34.1 – Certification, Third-Party Certification Program, 1987.

1.4 SYSTEM DESCRIPTION

- A. Performance Requirements:

1. Comply with tests procedures and required performances of ANSI/KCMA A161.1.
 - a. Tests: Performed on standard 30 inch kitchen wall and base cabinets.
 - b. Tests: Performed on standard 30 inch bathroom vanity base cabinets.
2. Drawers and Drawer Hardware for HUD Severe Use: Apply 75 pound point load to exterior edge of drawer extended 6 inches from its closed position for period of 15 minutes.
 - a. Successful Test: No failure in any part of drawer assembly or operating system and drawer remain operable with no mechanical interference with any part of cabinet assembly.

1.5 SUBMITTALS

- A. Product Data: Submit product data for cabinets and countertops under provisions of Section 01330.
- B. Shop Drawings: Submit Shop Drawings for cabinets, countertops, and backsplashes under provisions of Section 01330 for each type of kitchen layout.
 1. Countertop and backsplash Shop Drawings shall indicate the locations of all joints.
- C. Samples: Submit samples of the following for approval by the Architect:
 1. Two actual cabinet pulls with actual screw fasteners
 2. One set of actual countertop plastic laminatae color/pattern samples. These samples must be actual plastic laminate, not images or any kind of facsimile.
 3. One 6" X 6" sample of the countertop, including substrate material.
 4. The actual samples are not permitted to be used as part of the work; they may be kept by the Owner or Architect.

1.6 QUALITY ASSURANCE

- A. Certifications:
 1. Keep a hardcopy of the countertop manufacturer's installation instructions on site and readily available at all times during the counter installation work. These instruction documents shall include instructions for horizontal and vertical installations.
- B. Regulatory Requirements: Comply with following:
 1. Accessibility:

- a. Architectural Barriers Act of 1968 as amended (42 USC 4152-4157) and HUD implementing regulations (24 CFR Part 40).
 - 1) Uniform Federal Accessibility Standards (UFAS).
- b. Section 504 of the Rehabilitation Act of 1973 as amended (29 USC 794) and HUD implementing regulations 24 CFR Part 8.
- c. Fair Housing Accessibility Guidelines (24 CFR Chapter 1).
- d. Americans with Disabilities Act of 1990 (ADA) (28 CFR Part 35), as amended.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Packing, Shipping, Handling, and Unloading:

1. Do not deliver cabinets until building or storage area is enclosed and sufficiently dry to prevent damage from excessive changes in moisture content.
2. Protect casework and equipment from damage during delivery, storage, installation and subsequent building operations.

1.8 SCHEDULING

A. Scheduling and Completion: Comply with requirements of Section 01010.

1.9 PROJECT CONDITIONS

- ##### A. Field Measurements: Field measure spaces to receive cabinets before beginning fabrication.
1. Cabinets: Conform to building lines and neatly fitted around openings, pipes, and other obstructions.

1.10 FACTORY FINISHING

- ##### A. Factory sand, stained and finished with clear transparent catalyzed polyurethane factory finish and individually packaged and labeled in cardboard boxes.

PART 2 - PRODUCTS

2.1 KITCHEN AND BATHROOM CABINETS

- ##### A. Cabinet manufacturer and product information:
1. Manufacturer: DL Cabinetry

- a. Manufacturer's local address (assembly facility address): 6101 Chef Menteur Highway, New Orleans LA 20126.
 - b. Manufacturer's local phone number 504-245-2426
 - c. Manufacturer's website: <https://www.dlcabinetry.com>
 2. Alternate manufacturer: Executive Cabinetry
 - a. Manufacturer's address: 2838 Grandview Drive, Simpsonville, South Carolina, 29680.
 - b. Manufacturer's phone number: 1-800-654-6120.
 - c. Manufacturer's website: www.executivecabinetry.com
- B. General:
 1. Construct to produce sturdy and rigid construction.
 2. Wall and Base Cabinets: Constructed of solid lumber and/or plywood with wood veneer core.
 - a. **Particleboard, flakeboard, fiberboard, or hardboard are prohibited.**
 3. Base Cabinets:
 - a. Provide integral toe space of minimum 3 inches by 3 inches.
 - b. Toe kicks: 1 1/16 inch minimum thickness, finish matched to doors and drawer fronts.
 4. All cabinet parts shall be covered by the manufacturer's standard Lifetime Limited Warranty.
All provide cabinet products shall have GREENGUARD Gold Certification™ from the GREENGUARD Environmental Institute .
- C. Face Frames (not applicable)
- D. Doors and Door Hardware:
 1. Doors: 3/4 inch thick 7-ply A-D grade plywood with no more than one veneer joint on face. 3mm thick solid hardwood edging all around plywood.
 2. Hardwood veneer and solid hardwood type: Maple
 3. Door style: slab (no recessed panels, no raised panels, no stiles, and no rails)
 4. Edges: eased profile, finish matched to fronts and backs of doors.
 5. Hinges: Manufacturer's standard adjustable concealed hinge with self closing feature, 107-degree door swing range. Quantity of hinges per door shall be as per manufacturer's standards.
- E. Drawers and Drawer Hardware:
 1. Fronts Construction and Finish: Same as cabinet doors.
 2. Sides and Backs: Minimum 7/16 inch net thickness solid birch or solid maple with sides dovetailed or mortised and tenoned into fronts and backs. Manufacturer's standard clear finish.

3. Backs: Dadoed into sides. Manufacturer's standard clear finish.
 4. Bottoms: Minimum 1/4 inch softwood or hardwood exterior plywood let into front, sides, and back. Manufacturer's standard clear finish.
 5. Mount drawers on metal side rails with 75 pound loading capacity.
 6. Drawer slide hardware: manufacturer's standard type for wood drawers with soft close feature.
- F. End Panels:
1. End Panels: Minimum 3/4" plywood, maximum of one veneer joint per face. Veneer to match cabinet doors.
 2. Ends: Dadoed minimum of 1/4 inch deep to receive shelves, bottoms and tops.
 3. Ends: Let into dado in face frame.
 4. All sides of new cabinet boxes that will have an outside surface exposed to view shall be end panels.
- G. Shelves and Wall Cabinet Bottoms: 1/2 inch thick 2-2 Grade hardwood plywood wall cabinet bottom with 3/4 inch thick plywood shelves.
1. Bottoms: Glued and mechanically fastened.
 2. Adjustable Shelves: 3/4 inch thick Grade 2-2 exterior hardwood plywood with wood banded front edge or 3/4 inch net thickness solid lumber.
 - a. Shelves: Support as necessary to comply with shelf deflection provisions of ANSI/KCMA A161.1.
 - b. Shelves: When loaded at 15 PSF for seven days shall not deflect more than 1/16 inch per linear foot between supports.
 - c. Maximum Deflection: 1/4 inch between supports.
- H. Backs: Provide on all cabinets.
1. Backs: Minimum 1/4 inch thick Grade 2-2 hardwood plywood.
 2. Backs: Securely glued and mechanically fasted to ends.
 3. Backs: May be let into dado of ends and cleats or may be applied flush with ends. If backs are flush with ends, provide decorative finished end panel over actual cabinet end panel.
- I. Base Cabinet Bottoms: 1/2 inch thick Grade 2-2 exterior hardwood plywood.
1. Bottoms: Let into (rabbet or dado, manufacturers choice) end panels, front rails and installation cleats.
- J. Pulls:
1. Provide a minimum of one (1) pull at each cabinet door and one (1) pul at each cabinet drawer. Specific pull locations shall be determined by

Architect and conveyed to the Contractor via drawing and/or written description.

2. Pulls shall be model # 115.61.601 “wire handle”, manufactured by Hafele Worldwide Company, represented in the United States by Hafele America Company
3. Pull construction shall be solid stainless steel with a matte finish, factory-tapped to receive fastener machine screws.
4. Pull dimensions shall be 10mm diameter, 106mm length, and 35mm depth.
5. Each pull shall be tightly fastened through drawer fronts and cabinet doors with two (2) zinc-plated steel washer-head machine screws as recommended by the pull manufacturer. Use thread locker compound at each screw, and remove any excess thread locker compound such that none remains visible.

K. Wood nailers/blocking:

1. Provide solid wood as required for to securely fasten cabinet filler strips and any other cabinet items to existing construction.

L. Shims/spacers

1. Provide shims/spacers as required to install cabinets plumb and level. All shims and spacers shall be made of solid injection-molded plastic or PVC; cardboard and wood are not acceptable shim materials.

2.2 COUNTERTOPS AND BACKSPLASHES

- A. Countertops and backsplashes shall be Wilsonart or Formica plastic laminate factory-adhered to an engineered wood substrate. Countertops shall have an integral bullnose front edge and an integral rounded four-inch-high backsplash.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

- A. Remove existing cabinets and appliances as required to install new items.
- B. Examine the areas and conditions under which work of this Section will be performed. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- C. Verify support conditions before beginning installation. Verify location of mechanical and electrical rough-ins to assure proper match with installed equipment.

3.2 FIELD MEASUREMENTS

- A. Take necessary measurements in the field to assure proper dimensions for the work of this Section. Report any significant deviation of existing adjacent construction from plumb and level to the Architect prior to installing cabinets.

3.3 FABRICATION

- A. Fabricate the work of this Section in strict accordance with the approved Submittal(s) and the referenced standards.
- B. Unless noted otherwise or approved in writing by the Architect, all countertop ends shall overlap base cabinet end panels ¼”.
- C. Provide a sink cut-out at each new sink. Use sink manufacturer’s template for sink cut-out through countertop.
- D. Provide cut-outs in new backsplashes as required for electrical receptacles, electrical switches, and any other such items. Cut-outs for electrical devices shall be such that their edges are not visible when the device cover plate (standard size cover plate) is installed.

3.4 INSTALLATION

- A. Install the work of this Section in strict accordance with the approved Submittal(s), manufacturer instructions, manufacturer recommendations, and the referenced standards.
- B. Anchoring all items firmly into position.
- C. Install all cabinet and solid surface items plumb and level.
- D. The contractor shall supervise and be responsible for the proper locations and installation of all items.
- E. Provide all necessary safety equipment, materials and personnel to protect the public walks, entrance to buildings and grounds within the work areas of this Contract in order that pedestrians, tenants and the public be protected at all times.
- F. All work shall be done in a neat and clean manner by experienced and capable workers.
- G. Cabinet installation shall include all fillers necessary to complete and finish installation.
- H. Provide sealant as per Specification Section 07 92 00.

- I. Provide continuous bead of sealant at all countertop-to-backsplash joints. This sealant shall not recess below the elevation of the new countertop so as to hold water.
- J. Provide sealant to fill all gaps between new cabinets and adjacent gypsum board construction.
- K. Provide sealant to fill all gaps between the new backsplashes and the new wall cabinets.
- L. Provide sealant to fill all gaps between new countertop/backsplash material and adjacent gypsum board construction.
- M. Minimize the sizes of penetrations through cabinets (for plumbing, etc.), and seal all around such penetrations.

Cut and/or remove existing flooring material(s) as required to perform cabinet installation. Protect existing flooring and other finishes that are to remain.

END OF SECTION 12 35 30

SECTION 31 12 00 – CLEARING AND PREPARING SITE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following:
 - 1. Demolition, removal and disposal of site improvements indicated to be removed.
 - 2. Clearing and grubbing.
 - 3. Establishment of reference points and layout of the work.
- B. Limits of Work: Restrict operations to the Contract limits shown, except for required operations outside those limits such as establishing reference points, connecting to existing utilities, and similar off-site work.

1.3 PROJECT CONDITIONS

- A. Traffic: Conduct site clearing operations to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities. Do not close or obstruct streets, walks, or other occupied or used facilities without permission from authorities having jurisdiction.
- B. Protection of Existing Improvement: Provide protections necessary to prevent damage to existing above-ground and underground improvements indicated to remain in place, including property of the Owner, utility corporations, and other public and private owners.
 - 1. Protect improvements on adjoining properties and on Owner's property that are not indicated to be removed.
 - 2. Restore damaged improvements to their original condition, as acceptable to property owners.
- C. Regulations: Comply with governmental regulations applicable to the removal and disposal required under this Section.

1.4 EXISTING CONDITIONS

- A. Drawing Indications: the locations and character of existing above and below ground utilities and improvements indicated on the Drawings are based upon a topographic survey prepared by others.

- B. Representations: The Owner, the Architect, and the Architect’s consultants make no representation regarding the accuracy and completeness of the information shown. The Contractor shall be responsible for on-site investigations to verify conditions, and for notifying the Owners of known and suspected underground utilities and other services, before starting work, to obtain information regarding items which may exist but are not shown.

PART 2 - PRODUCTS
(Not Used)

PART 3 - EXECUTION

3.1 REFERENCE POINTS

- A. Bench Marks: Locate existing benchmarks and other reference points necessary to establish limits and extent of work. Do not proceed with balance of site work until reference points have been established. Verify with Architect that the benchmark and reference points are in accordance with the Construction Documents.
- B. Protection: Protect and maintain reference points from dislocation or damage. Replace or repair, immediately, reference points that become damaged, destroyed or dislocated.

3.2 SETTING-OUT

- A. Location: Accurately locate building, pavement, curbs, and other construction on site according to information given in Documents. Erect substantial batter boards, and set grade stakes securely, to remain in place until building corners and heights are permanently established.
- B. Temporary Markers: Establish temporary benchmarks or markers to set levels at floor slab and each story and elsewhere as necessary to properly locate all construction. Verify locations and inverts of sewer, drain, and water connection points.
- C. Subsequent Work: Do not proceed with demolition, excavation or other construction work until laying-out has been completed.

3.3 DEMOLITION

- A. General: Perform site demolition in a systematic manner. Use methods as appropriate and necessary to complete removal of items indicated on the Drawings.
- B. Filling Holes: Fill holes and depressions resulting from demolition operations, with satisfactory soil material, unless further excavation or earthwork is indicated. Place satisfactory soil material in compliance with Section 31 23 23 – Backfilling.

3.4 CLEARING AND GRUBBING

- A. General: Remove shrubs, grass and other vegetation. “Removal” includes digging out and off-site, disposing of roots, and below-ground portions of items.
- B. Filling Depression: Fill depressions resulting from clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated. Place satisfactory soil material in compliance with Section 311200 – Backfilling.

3.5 UTILITIES

- A. Verification: Verify the location, size, levels and character of service of all utilities underground and above ground. Inquire of utility corporations and probe site, if necessary, before beginning work.
- B. Adjustment: Any adjustments or modifications to utilities to place them in a condition equal to that existing prior to construction of Contract work shall be the sole responsibility of the Contractor and shall be made by him. Any adjustments to utilities that may be necessary during the prosecution of the work under the Contract shall likewise be made by the Contractor.
- C. Protection: Maintain existing utilities indicated to remain; keep in service and protect against damage during demolition operations.
- D. In-Use Utilities: Do not interrupt existing utilities serving occupied or used facilities, except when authorized by authorities having jurisdiction. Provide temporary services as necessary during interruptions.
- E. Abandoned Utilities: Abandonment or removal of certain underground pipe or conduits may be indicated on mechanical or electrical drawings, and is included under work of related Division 15 and 16 sections.

3.6 DISPOSAL OF WASTE MATERIALS

- A. Burning and Burying: Burning and burying is not permitted on Owner’s property.
- B. Removal: Remove debris and unsuitable materials from the site to a legal landfill or disposal site, promptly to prevent large accumulations.

END OF SECTION 31 12 00

SECTION 31 23 16 - EXCAVATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. All excavations.

1.3 PROTECTION

- A. Underpin adjacent structures which may be damaged by excavation work, including service utilities and pipe chases.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected work in area until notified to resume work.
- C. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- D. Grade excavation top perimeter to prevent surface water runoff into excavation.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Subsoil: Excavated material, graded free of lumps larger than 6 inches, rocks larger than 3 inches, and debris.

PART 3 - EXECUTION

3.1 PREPARATION

- A. Identify required lines, levels, contours, and datum.

3.2 EXCAVATION

- A. Excavate subsoil required for foundations, paved areas, sidewalks, and other work.
- B. Excavate for trenches to depth indicated or required and to establish indicated flow lines or invert elevations. Maintain uniform width required for particular

item to be installed, including width to provide amply working room. Provide 9" clearance on both sides of pipe or conduit as minimum, trench width is indicated on the drawings.

- C. Excavation shall not interfere with normal 45 degree bearing angle of any foundation.
- D. Hand trim excavation and leave free of loose matter.
- E. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd, measured by volume.
- F. Correct unauthorized excavation at no cost to Owner.
- G. Fill excavated areas in accordance with Section 31 23 23 - Backfilling. Use granular material under pavement and structural slabs.

END OF SECTION 31 23 16

SECTION 31 23 23 - BACKFILLING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section involves the following:
 - 1. Preparation of Sub-base.
 - 2. Compaction of Sub-base Material.

1.3 REFERENCES

- A. ASTM C136 - "Sieve Analysis of Fine and Coarse Aggregates".
- B. ASTM D698 - "Moisture Density Relations of Soils and Soil-Aggregate Mixture".

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Materials Under Foundations and Pavement:
 - 1. Granular Material (Non-Plastic): Mississippi River "pumped sand", AASHTO A-4 or better having a maximum liquid limit of 25 and a maximum plasticity index of 6.

All sands shall be free of trash, weeds, lumps, humus, pieces of wood or any other deleterious material. It shall also have a group index number not to exceed 6.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify area free of debris, snow, ice, or water, and ground surfaces are not frozen.
- B. Verify area is properly graded.

3.2 PREPARATION

- A. After excavation, place select fill material in maximum of 12" lifts, and compact to 95% of the maximum dry density at optimum moisture in accordance with ASTM D698. Finished sub-base should be established to the lines and grades shown on the plans. All surfaces on areas designated to receive grass will be backfilled with existing topsoil.
- B. Cut out soft areas of sub-grade not readily capable of *in situ* compaction. Backfill with pumped river sand.

3.3 TOLERANCES

- A. Top Surface of Backfilling: Plus or minus 1/4 inch.

3.4 FIELD QUALITY CONTROL

- A. Compaction testing will be performed in accordance with ASTM D1556 and D2922 and under the provisions of Section 01 45 23 - Testing Laboratory Services.
- B. If tests indicate work does not meet specified requirements, recompact, replace and retest at no cost to Owner.

END OF SECTION 31 23 23

SECTION 31 23 35 - TRENCHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Excavate trenches for utilities as indicated on the drawings.
 - 2. Compacted bedding and compacted backfill over utilities.
 - 3. Compaction requirements.

1.3 SAMPLES

- A. Submit samples under provisions of Section 01 45 23 – Testing Laboratory Services.

1.4 PROTECTION

- A. Protect excavations by shoring, bracing, sheet piling, underpinning, or other methods required to prevent cave-in or loose soil from falling into excavation.
- B. Notify Architect of unexpected subsurface conditions and discontinue work in affected area until notification to resume work.
- C. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- D. Grade excavation top perimeter to prevent surface water run-off into excavation.

PART 2 - PRODUCTS

2.1 SELECT FILL MATERIALS AND BEDDING

- A. Sewer Line - Backfilling shall be as shown on the drawings.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify areas to be backfilled are free of debris, snow, ice, or water, and surfaces are not frozen.

3.2 PREPARATION

- A. Identify required lines, levels, contours, and datum.

3.3 EXCAVATION

- A. Excavation work shall be performed in a safe and proper manner with appropriate precautions being taken against all hazards.
- B. Cut trenches sufficiently wide to enable installation of utilities and allow inspection.
- C. Coordinate with Section 31 23 16 – Excavation.
- D. Stockpile excavated material on site and remove excess subsoil from site.

3.4 BACKFILLING

- A. Support pipe and conduit during placement and compaction of backfill.
- B. Coordinate with Section 31 23 23 – Backfilling.
- C. Backfill material under paved areas shall be a granular material (non-plastic).
- D. Backfill materials outside paved areas could be select excavated materials (top soil).

END OF SECTION 31 23 35

SECTION 31 31 17 – TERMITE CONTROL, NEW CONSTRUCTION

CONTROL-NEW CONSTRUCTION PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Condition of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This Section includes the following at the New Construction Component Building, II-NC:
 - 1. Soil treatment below slabs-on-grade for subterranean insects.
 - 2. Soil treatment at interior and exterior foundation perimeter for subterranean insects.
 - 3. Soil treatment outside building perimeter and under paved extensions for subterranean insects.

1.3 DEFINITIONS

- A. EPA: Environmental Protection Agency.
- B. PCO: Pest Control Operator

1.4 PCO: SUBMITTALS

- A. Product Data: Treatments and application instructions, including EPA Registered Label. Under provisions of Section 01 33 00.
- B. Product Certificates: Signed by manufacturers of termite control products certifying that treatments furnished comply with requirements.
- C. Provide copy of termite exterminator license.
- D. Provide copy of place or business permit. Soil Treatment Application Report: After application of termiticide is completed, submit report for Owner's record information, including the following as applicable:
 - 1. Date and time of application.
 - 2. Moisture content of soil before application.
 - 3. Brand name and manufacturer of termiticide.
 - 4. Quantity of undiluted termiticide used.
 - 5. Dilutions, methods, volumes, and rates of application used.
 - 6. Areas of application.

7. Water source for application.

E. Warranties: Submit Original Warranty.

1.5 QUALITY ASSURANCE

A. **Applicator Qualifications:** A PCO who is licensed according to regulations of authorities having jurisdiction to apply termite control treatment in jurisdiction where Project is located and who is experienced and has completed termite control treatment similar to that indicated for this Project and whose work has a record of successful in-service performance.

B. **Regulatory Requirements:** Formulate and apply termiticides, and label with a Federal registration number, to comply with EPA regulations and authorities having jurisdiction.

1.6 PROJECT CONDITIONS

A. **Environmental Limitations:** To ensure penetration, do not treat soil that is water saturated or frozen. Do not treat soil while precipitation is occurring. Comply with EPA-Registered Label requirements and requirements of authorities having jurisdiction.

1.7 COORDINATION

A. Coordinate soil treatment application with excavating, filling, and grading and concreting operations. Treat soil under footings, grade beams, and ground supported slabs, before construction.

1.8 WARRANTY

A. **General Warranty:** Special warranty specified in this Article shall not deprive Owner of other rights Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

B. **Special Warranty:** Written warranty, signed by applicator and Contractor certifying that termite control work, consisting of applied soil termiticide treatment, will prevent infestation of subterranean termites. If subterranean termite activity or damage is discovered during warranty period, re-treat soil and repair or replace damage caused by termite infestation.

C. **Warranty Period:** Five years from the date of the Substantial Completion for material and installation under provisions 01 77 00.

D. **Warranty Period:** Cover against invasion by propagation of subterranean termites, damage to building or building contents, repairs to building or building contents so caused.

- E. Inspect work annually and report to Owner in writing.

1.9 MAINTENANCE SERVICE

- A. Continuing Service: Provide a proposal for continuing service, including monitoring, inspection, and retreatment for occurrences of termite activity, from applicator to Owner, in the form of a standard yearly (or other period) continuing service agreement, starting on the date of the Permission to Occupy Project Mortgages. State services, obligations, conditions, and terms for agreement period and for future renewal options.

PART 2 - PRODUCTS

2.1 SOIL TREATMENT

- A. Termiticide: Provide an EPA-registered termiticide complying with requirements of authorities having jurisdiction, in a soluble or emulsible, concentrated formulation that dilutes with water or foaming agent, and formulated to prevent termite infestation. Use only soil treatment solutions that are not harmful to plants. Provide quantity required for application at the label volume and rate for the maximum termiticide concentration allowed for each specific use, according to the product's EPA-Registered Label.
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following manufacturers:
 - 1. Dursban TC, 1% in water solution.
 - 2. Dragnet (Permethin), 0.5% in water emulsion.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine substrates, areas, and conditions, with Applicator present, for compliance with requirements for moisture content of the soil, interfaces with earthwork, slab and foundation work, landscaping, and other conditions affecting performance of termite control. Proceed with application only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's written instructions for preparing substrate. Remove all extraneous sources of wood cellulose and other edible materials such as wood debris, tree stumps and roots, stakes, formwork, and construction waste wood from soil and around foundations.
- B. Soil Treatment Preparation: Remove foreign matter and impermeable soil

materials that could decrease treatment effectiveness on areas to be treated. Loosen, rake, and level soil to be treated, except previously compacted areas under slabs and footings. Termiticides may be applied before placing compacted fill under slabs if recommended by termiticide manufacturer.

- C. Fit filling hose connected to water source at the site with a backflow preventer, complying with requirements of authorities having jurisdiction.

3.3 APPLICATION, GENERAL

- A. General: Comply with the most stringent requirements of authorities having jurisdiction and with manufacturer's EPA-Registered Label for products.

3.4 APPLYING SOIL TREATMENT

- A. Application: Mix soil treatment termiticide solution to a uniform consistency. Provide quantity required for application at the label volume and rate for the maximum specified concentration of termiticide, according to manufacturer's EPA-Registered Label, to the following so that a continuous horizontal and vertical termiticidal barrier or treated zone is established around and under building construction. Distribute the treatment evenly.

1. Slabs-on-Grade: Under ground-supported slab construction, including footings, building slabs, and attached slabs as an overall treatment. Treat soil materials before concrete footings and slabs are placed.
2. Foundations: Adjacent soil including soil along entire inside perimeter of foundation walls, along both sides of interior partition walls, around plumbing pipes and electric conduit penetrating slab, and around interior column footers, piers, and chimney bases: and along entire outside perimeter, from grade to bottom of footing. Avoid soil washout around footings.
3. Covered Porches and Equipment Areas: Soil under and adjacent to foundations as previously indicated. Treat adjacent areas including around entrance porches and outdoor equipment areas. Apply overall treatment only where attached concrete platform and porches are on fill or ground.

- B. Application Rates: Apply soil treatment solution as follows:

1. Within building area, with or without slabs-on-grade, at rate of one (1) gallon per ten (10) square feet.
2. Under beams, foundations and footings, including horizontal and vertical surfaces of excavations, at rate of one (1) gallon per ten (10) square feet.
3. Outside building perimeter in a strip at least 2' wide, and under porches, areaways, aprons, pads, stair landings or paved extensions, at rate of one

(1) gallon per five (5) square feet.

4. At pavement abutting structures, limit treatment under pavement to a 2' wide strip adjacent to structure, at rate of one (1) gallon per five (5) square feet.
5. At expansion joints, control joints, and areas where slab will be penetrated, at rate of two (2) gallons per five (5) linear feet of penetration.

C. Apply as a coarse spray to ensure uniform distribution.

D. Coordinate soil treatment at foundation perimeter with finish grading and landscaping work to avoid disturbance of treated soil. Retreat disturbed treated soil.

3.5 RETREATMENT

A. If inspection identifies the presence of termites, retreat soil and retest.

B. Use same toxicant as for original treatment.

END OF SECTION 31 31 17

SECTION 32 13 13 - CEMENT PAVING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Concrete sidewalks, curbs, and concrete paving.
 - 2. Reinforcement and joints.
 - 3. Surface finish.
 - 4. Curing.
- B. Compliance with Jefferson Parish requirements and standards for paving in the public right-of way.

1.3 REFERENCES

- A. ACI 301 - Specifications for Structural Concrete for Buildings.
- B. ASTM A185 - Welded Steel Wire Fabric for Concrete Reinforcement.
- C. ASTM D1751 - Preformed Expansion Joint Fillers for Concrete Paving and Structural Construction.
- D. ASTM D1752 - Preformed Sponge Rubber and Cork Expansion Joint Fillers for Concrete Paving and Structural Construction.
- E. ASTM A615 - Deformed and Plain Billet-Steel for Concrete Reinforcement 40 ksi yield grade.
- F. ASTM C33 - Concrete Aggregates.
- G. ASTM C94 - Ready Mixed Concrete.
- H. ASTM C150 - Portland Cement.
- I. ASTM C260 - Air-Entraining Admixtures for Concrete.
- J. ASTM C494 - Chemical Admixtures for Concrete.

- K. ASTM C309 - Liquid Membrane - Forming Compounds for Curing Concrete.
- L. Jefferson Parish Department of Engineering drawing sheet, “Standard Residential Details for Connecting Driveways to Existing Roadways”, latest revision date: 11/19/2018.
- M. Jefferson Parish Department of Engineering set of two drawing sheets, “Standard Residential Sidewalk Details”, latest revision date: 11/19/2018. Comply with these standards for all work in the public right-of-way.

1.4 QUALITY CONTROL

- A. Perform work in accordance with ACI 301.
- B. Obtain materials from same source throughout.

1.5 REGULATORY REQUIREMENTS

- A. Conform to applicable state and local codes for paving work on public property.

1.6 TESTS

- A. See Section 01 45 23.
- B. Submit proposed mix design for review prior to commencement of work.
- C. Testing laboratory will take cylinders and perform slump and air entrainment tests in accordance with ACI 301.
- D. Four (4) concrete test cylinders will be taken for every 25 or less cubic yards of concrete placed.
- E. One (1) slump test will be taken for each set of test cylinders taken.
- F. The testing laboratory has the authority at the site to reject concrete that does not meet the maximum slump requirement.

1.7 SUBMITTALS

- A. Submit product data under provisions of Section 01 33 00.
- B. Include data on joint filler, admixtures and curing compounds.
- C. Submit manufacturer's instructions under provisions of Section 01 33 00.

PART 2 - PRODUCTS

2.1 CONCRETE MATERIALS

CEMENT PAVING

- A. Cement: ASTM C150 Normal-Type I Portland type, gray color.
- B. Aggregate: Provide ASTM C33 normal weight aggregates 3/4" size, clean, uncoated crushed stone or gravel coarse aggregate free of materials which cause staining or rust spots; fine aggregate shall be clean natural sand.
- C. Water: Clean, fresh, potable, and not detrimental to concrete.
- D. Air-entraining admixture: ASTM C260.
- E. Water-reducing admixture: ASTM C494.
- F. Fine and Coarse Aggregate: ASTM C33.
- G. For all work in the public right-of-way, comply with Jefferson Parish requirements.

2.2 FORM MATERIALS

- A. Conform to ACI 301.

2.3 REINFORCEMENT

- A. Reinforcing Steel: ASTM A615; 60 ksi yield grade; deformed billet steel bars, uncoated finish.
- B. Welded Steel Wire Fabric: Plain type, ANSI/ASTM A185; in flat sheets; or coiled rolls; uncoated finish.
- C. Tie Wire: Annealed steel, minimum 16 gauge size.
- D. Dowels: ASTM A615; 60 ksi yield grade, plain, smooth steel uncoated finish.
- E. Accessories: Conform with CRSI manual, accessories exposed in finish surface shall be galvanized.
- F. For all work in the public right-of-way, comply with Jefferson Parish requirements.

2.4 CONCRETE MIX

- A. Provide ASTM C94 ready-mixed concrete. Batch mixing at site not acceptable.
 - 1. Strength: 4,000 psi minimum at 28 days.
 - 2. Slump range: 4" maximum.
- B. Provide an approved water-reducing admixture in all concrete.
- C. Provide an air-entraining admixture in all concrete. Air content 4% to 7%.

- D. Fly ash shall not be used.
- E. Use accelerating admixtures in cold weather only when approved by Architect. Use of admixtures will not relax cold weather placement requirements. Do not use calcium chloride.
- F. For all work in the public right-of-way, comply with Jefferson Parish requirements.

2.5 EXPANSION JOINT MATERIAL (PRE-FORMED JOINT FILLER)

- A. Expansion joint material shall be non-extruding, asphaltic impregnated pre-formed, 1/2 inch thick and extending full depth of concrete.

2.6 CONCRETE ACCESSORIES

- A. Formed Construction Joints: Minimum 18 gage galvanized steel; tongue and groove profile; keyed shape; complete with anchorage devices, and flexible screed cap.

2.7 CURING AND SEALING COMPOUND:

- A. Subject to compliance with requirements, provide products as produced by the following manufacturers:
 - 1. Rez-Seal by Euclid Chemical Co.
 - 2. MB-429 by Master Builders.
 - 3. Kure-N-Seal by Sonneborn.
- B. Conform to ASTM C-309, TYP1 Transparent, quick drying and non-yellowing.

PART 3 - EXECUTION

3.1 INSPECTION

- A. Verify compacted sub-grade granular base is ready to support paving and imposed loads.
- B. Verify gradients and elevations of base are correct.
- C. Beginning of installation means acceptance of existing conditions.

3.2 PREPARATION

- A. Before placing concrete, moisten base to minimize absorption of water from fresh concrete.

- B. Notify Architect minimum of 24 hours prior to commencement of concreting operations.
- C. Select fill material under base course shall be compacted to 95% of maximum density in accordance with ASTM D698.
- D. Base course shall be as specified in Section 31 23 23.

3.3 FORMING

- A. Place and secure forms to correct location, dimension, and profile.
- B. Assemble formwork to permit easy stripping and dismantling without damaging concrete.
- C. Place joint fillers vertical in position, in straight lines. Secure to formwork during concrete placement.

3.4 REINFORCEMENT

- A. Place reinforcement at mid-height of slabs-on-grade.
- B. Interrupt reinforcement at all joints. Provide expansion joint with load transfer device as shown on the drawings. Provide contraction joints with load transfer devices as shown on the drawings.
- C. Place reinforcement to achieve slab and curb alignment as detailed.
- D. Provide dowels as shown on the drawings.

3.5 JOINTS

- A. Place joints as shown on the drawings to correct elevation and profile. Align sidewalk and pavement joints. Joints shall be spaced as shown on the drawings.
- B. Place joint filler between paving components and building or other appurtenances. Recess top of filler 1 inch.
- C. Provide scored joints (dummy joints) as shown on the drawings.

3.6 PLACING CONCRETE

- A. Place concrete in accordance with ACI 301.
- B. Hot Weather Placement: ACI 301.
- C. Cold Weather Placement: ACI 301.

- D. Ensure reinforcement, inserts, embedded parts, and formed joints are not disturbed during concrete placement.
- E. Place concrete continuously between predetermined construction joints. Do not break or interrupt successive pours such that cold joints occur.
- F. Make all joints coincide. Make sure joints are of the type indicated.
- G. Place concrete, screed and wood float surfaces to a smooth and uniform finish, free of open texturing and exposed aggregate.
- H. Avoid working mortar to surface.
- I. Ensure finished surfaces to not vary from true lines, levels or grades by more than 1/8 inch in 10 feet when measured with straightedge.

3.7 FINISHING

- A. Sidewalk Paving: Light broom, radiused and trowel joint edges.
- B. Miscellaneous Concrete Surfaces: Light broom.
- C. Concrete Curb Ramps: Medium broom finish perpendicular to sloping grade.
- D. Handicap Ramps: Medium Broom finish perpendicular to sloping grade.

3.8 JOINT SEALANTS

- A. Install joint sealants where indicated in accordance with manufacturer's installation instructions. Clean and prime joints. Remove dirt and loose coatings.
- B. Apply sealants in continuous beads, without open joints, voids, or air pockets. Hand tool and finish all joints.

3.9 FIELD QUALITY CONTROL

- A. Field inspection and testing will be performed under provisions of Section 01 45 23.
- B. Maintain records of placed concrete items. Record date, location of pour, quantity, air temperature, and test samples taken.

3.10 PROTECTION

- A. Immediately after placement, protect concrete under provisions of Section 015500 from premature drying, excessive hot or cold temperatures, and mechanical injury.

3.11 CLEANING

- A. Perform cleaning during installation of the work and upon completion of the work. Remove from site all excess materials, debris, and equipment. Repair damage resulting from concrete operations.
- B. Sweep concrete sidewalks and pavement, wash free of stains, discoloration, dirt, and other foreign material immediately prior to final acceptance.
- C. Striping, Legends and Symbols. Application will be permitted after 7 days from the date of completion of the concrete pavement.

END OF SECTION 32 13 13

SECTION 32 31 13 – CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Chain-link fencing without barbed wire.
- B. Related Requirements:
 - 1. Section 03 30 00 – Cast-in-Place Concrete

1.3 SUBMITTALS

- A. Product Data: For each type of product.
 - 1. Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for the following:
 - a. Fence and gate posts, rails, and fittings.
 - 1) Chain-link fabric, reinforcements, and attachments.
- B. Shop Drawings: For each type of fence and gate assembly.
 - 1. Include plans, elevations, sections, details, and attachments to other work.
- C. Samples for Initial Selection: For each type of factory-applied finish.
- D. Qualification Data: For testing agency.
- E. Product Certificates: For each type of chain-link fence.
- F. Product Test Reports: For framework strength according to ASTM F1043, for tests performed by manufacturer and witnessed by a qualified testing agency.
- G. Field quality-control reports.

1.4 FIELD CONDITIONS

- A. Field Measurements: Verify layout information for chain-link fences shown on Drawings in relation to property survey and existing structures. Verify dimensions by field measurements.

1.5 WARRANTY

- A. Special Warranty: Manufacturer and installer agree to repair or replace components of chain-link fences and gates that fail in materials or workmanship within specified warranty period.
 - 1. Failures include, but are not limited to, the following:
 - a. Failure to comply with performance requirements.
 - b. Deterioration of metals, metal finishes, and other materials beyond normal weathering.
 - 2. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN-LINK FENCE FABRIC

- A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of selvage knuckle or twist according to "CLFMI Product Manual" and requirements indicated below:
 - 1. Fabric Height: 48 inches.
 - a. Mesh Size: 2 inches x 11 gauge.
 - b. Zinc-Coated Fabric: ASTM A392, Type II, Class 1, 1.2 oz./sq. ft. with zinc coating applied after weaving.
 - 2. Selvage: Knuckled at both selvages twisted top and knuckled bottom.

2.2 FENCE FRAMEWORK

- A. Posts and Rails: ASTM F1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 based on the following:
 - 1. Fence Height: 48 inches.
 - 2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.
 - a. Line Posts: 1-7/8 inches in diameter, spaced at 96" maximum on-center.
 - b. End, Corner, and Pull Posts: 2 3/8 inches in diameter.

3. Horizontal Framework Members: Intermediate bottom rails according to ASTM F1043, Schedule 40.
 - a. Top and Bottom Rails: 1-3/8 inches in diameter.
4. Brace Rails: Comply with ASTM F1043.

2.3 TENSION WIRE

- A. Metallic-Coated Steel Wire: 0.177-inch- diameter, marcelled tension wire according to ASTM A824, with the following metallic coating:
 1. Type II: Zinc coated (galvanized) by hot-dip process, with the following minimum coating weight:
 - a. Matching chain-link fabric coating weight.
- B. Aluminum Wire: 0.192-inch- diameter tension wire, mill finished, according to ASTM B211 (ASTM B211M), Alloy 6061-T94 with 50,000-psi (344-MPa) minimum tensile strength.

2.4 SWING GATES

- A. General: ASTM F900 for gate posts and single swing gate types.
 1. Gate Leaf Width: 42 inches.
 2. Framework Member Sizes and Strength: Based on gate fabric height of 96 inches.
- B. Pipe and Tubing:
 1. Zinc-Coated Steel: ASTM F1043 and ASTM F1083.
 2. Gate Posts: Round tubular steel.
 3. Gate Frames and Bracing: Round tubular steel.
- C. Frame Corner Construction: Welded.
- D. Extended Gate Posts and Frame Members: Fabricate gate posts and frame end members to extend 12 inches above top of chain-link fabric at both ends of gate frame to attach barbed wire assemblies.
- E. Hardware:
 1. Hinges: 180-degree inward swing.
 2. Latch: Permitting operation from both sides of gate with provision for padlocking accessible from both sides of gate.

3. Padlock and Chain. (Provided by Owner.)

2.5 FITTINGS

- A. Provide fittings according to ASTM F626.
- B. Post Caps: Provide for each post.
 1. Provide line post caps with loop to receive tension wire or top rail.
- C. Rail and Brace Ends: For each gate, corner, pull, and end post.
- D. Rail Fittings: Provide the following:
 1. Top Rail Sleeves: Pressed-steel or round-steel tubing than 6 inches long.
 2. Rail Clamps: Line and corner boulevard clamps for connecting intermediate and bottom rails to posts.
- E. Tie Wires, Clips, and Fasteners: According to ASTM F626.
 1. Standard Round Wire Ties: For attaching chain-link fabric to posts, rails, and frames, according to the following:
 - a. Hot-Dip Galvanized Steel: 0.106-inch diameter wire; galvanized coating thickness matching coating thickness of chain-link fence fabric.

2.6 BARBED WIRE (not used)

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Examine areas and conditions, with Installer present, for compliance with requirements for a certified survey of property lines and legal boundaries, site clearing, earthwork, pavement work, and other conditions affecting performance of the Work.
 - 1. Do not begin installation before final grading is completed unless otherwise permitted by Architect.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

- A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN-LINK FENCE INSTALLATION

- A. Install chain-link fencing according to ASTM F567 and more stringent requirements specified.
 - 1. Install fencing on established boundary lines inside property line.
- B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.
- C. Post Setting: Set posts in 3000 psi, 8 inch diameter concrete at indicated spacing into firm, undisturbed soil.
 - 1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.
 - 2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.
 - a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.
- D. Terminal Posts: Install terminal end, corner, and gate posts according to ASTM F567 and terminal pull posts at changes in horizontal or vertical alignment of 15 degrees or more. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.
- E. Line Posts: Space line posts uniformly at 96 inches on-center.

- F. Post Bracing and Intermediate Rails: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Diagonally brace terminal posts to adjacent line posts with truss rods and turnbuckles. Install braces at end and gate posts and at both sides of corner and pull posts.
- G. Tension Wire: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch diameter hog rings of same material and finish as fabric wire, spaced a maximum of 24 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:
 - 1. Extended along bottom of fence fabric. Install top tension wire through post cap loops. Install bottom tension wire within 6 inches of bottom of fabric and tie to each post with not less than same diameter and type of wire.
- H. Top Rail: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Run rail continuously through line post caps, bending to radius for curved runs and terminating into rail end attached to posts or post caps fabricated to receive rail at terminal posts. Provide expansion couplings as recommended in writing by fencing manufacturer.
- I. Intermediate and Bottom Rails: Secure to posts with fittings.
- J. Chain-Link Fabric: Apply fabric to inside of enclosing framework. Leave 1-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.
- K. Tension or Stretcher Bars: Thread through fabric and secure to end, corner, pull, and gate posts, with tension bands spaced not more than 15 inches o.c.
- L. Tie Wires: Use wire of proper length to firmly secure fabric to line posts and rails. Attach wire at one end to chain-link fabric, wrap wire around post a minimum of 180 degrees, and attach other end to chain-link fabric according to ASTM F626. Bend ends of wire to minimize hazard to individuals and clothing.
 - 1. Maximum Spacing: Tie fabric to line posts at 12 inches o.c. and to braces at 24 inches o.c.
- M. Fasteners: Install nuts for tension bands and carriage bolts on the side of fence opposite the fabric side. Peen ends of bolts or score threads to prevent removal of nuts.

END OF SECTION 32 31 13

SECTION 32 92 23 – SODDING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Condition of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. This section includes the following:
 - 1. Sod Installation.
 - 2. Fertilizer.
 - 3. Additional Earth Fill.
 - 4. Topsoil.
 - 5. Agricultural Lime.
 - 6. Maintenance.
 - 7.
- B. Provide new sod to cover all bare soil, including new fill. (Exception: do not sod planting beds.)

1.3 SUBMITTALS

- A. General: Submit the following in accordance with Section 01 33 00.
- B. Product certificates signed by manufacturers certifying that their products comply with specified requirements.
 - 1. Manufacturer's certified analysis for standard products.
 - 2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.
 - 3. Label data substantiating that planting materials comply with specified requirements.
 - 4. Certification of each seed mixture for sod, identifying sod source, including name and telephone number of supplier.
- C. Qualification data for firms and persons specified to demonstrate their capabilities and experience. Include lists of completed projects with project names and addresses, names and address of architects and owners, and other information specified.

- D. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated.
 - 1. Analysis of existing surface soil.
 - 2. Analysis of imported topsoil.
- E. Maintenance instructions recommending procedures to be established by Owner for maintenance of sod during an entire year. Submit before expiration of required maintenance periods.

1.4 QUALITY ASSURANCE

- A. Sod: Minimum age of 18 months, with root development that will support its own weight without tearing, when suspended vertically by holding the upper two corners.
- B. Certifications: Submit sod certification for grass species and location of sod source.

1.5 QUALIFICATIONS

- A. Sod Producer: Company specializing in sod production and harvesting with minimum five years experience, and certified by the State of Louisiana.
- B. Sod Installer: Company approved by the sod producer.
- C. Soil Samples: Contractor shall sample soils, which are to be sodded and obtain analysis by a recognized agronomist to determine adjustment, if any, needed to provide proper soil acidity for grass mixture, which will be planted.
 - 1. For information only, submit two (2) copies of agronomist's recommendations to the Architect.

1.6 REGULATORY REQUIREMENTS

- A. Regulatory Agencies: Comply with regulatory agencies for fertilizer and herbicide composition.
- B. Certificates of Compliance: Provide certificate of compliance from authority having jurisdiction indicating approval of fertilizer and herbicide mixture.

1.7 DELIVERY, STORAGE, AND HANDLING

- A. Delivery:
 - 1. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

2. Sod shall be delivered within 36 hours after cutting and shall be inspected by the Architect upon delivery to determine acceptability.
3. Deliver sod on pallets. Protect exposed roots from dehydration.
4. Sod shall not be delivered prior to complete preparation of the site for planting and it shall be planted immediately upon delivery and not more than 48 hours after cutting.
5. Do not deliver more sod than can be laid within 24 hours after delivery to site.

1.8 MAINTENANCE DATA

- A. Operation Data: Submit for continuing Owner maintenance.
- B. Maintenance Data: Include maintenance instructions, cutting method and maximum grass height; types, application frequency, and recommended coverage of fertilizer.

1.9 MAINTENANCE SERVICE

- A. Maintain sodded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Sod: 100% St. Augustine Grass (*Stenotaphrum secundatum*) field grown, at least two (2) years old, well rooted, and cut to a depth of 3/4" to 1". Sod shall be cut in rectangular strips twelve (12") inches wide and of a size, which will permit the strip to be lifted without breaking. Sources of sod shall be made known to the Architect at least five (5) days prior to cutting. Delivered sod shall be approved by the Architect prior to installation.
- B. Topsoil: Shall be fertile, friable, natural surface soil obtained from a well-drained area and free of all stones, brush, weeds, shale, stumps, roots and other organic matter. The top-soil shall have at least six (6%) percent organic matter and an acidity range between pH 5.0 to 7.0 inclusive.
- C. Fertilizer: Agriform CRF 16-7-12 (+Iron), Sierra Chemical Company or Ferti-Lome Centipede Lawn Fertilizer 15-0-15..
- D. Additional Earth Fill: If required for proper sod bed preparation and finish grading operations shall be four inches top soil, clean and free from clay, roots, mulch or other objectionable material.
- E. Agricultural Lime: Shall consist of ground limestone or seashells containing at least 90 percent calcium carbonate equivalent (CaCo) and not more than 10 percent magnesium carbonate (MgCo). The material shall be ground so that 100

percent must pass a No. 8 sieve and a minimum of 30 percent must pass a No. 100 sieve.

- F. Water: Clean, fresh, and free of substances or matter, which could inhibit vigorous growth of grass.

PART 3 - EXECUTION

3.1 EXAMINATION

- A. Soil Base: Verify that prepared soil base is ready to receive the work of this Section.

3.2 PREPARATION OF SUBSOIL

- A. Prepare subsoil to eliminate ruts, uneven areas and low spots.
- B. Grades: Maintain lines, levels, profiles and contours. Make changes in grade gradual. Blend slopes into level areas.
- C. Remove foreign materials and undesirable plants and their roots. Do not bury foreign material beneath areas to be sodded.
 - 1. Remove contaminated subsoil.
- D. Scarify subsoil to a depth of 3 inches where topsoil is to be placed.
 - 1. Repeat cultivation in areas where equipment, used for hauling and spreading topsoil, has compacted subsoil.

3.3 PLACING TOPSOIL

- A. Spread topsoil to a minimum depth of 4 inches over area to be sodded.
- B. Place topsoil during dry weather and on dry unfrozen subgrade.
- C. Remove vegetable matter and foreign non-organic material while spreading.
- D. Grade topsoil to eliminate rough, low, or soft areas, and to ensure positive drainage.

3.4 FERTILIZING

- A. Apply fertilizer in accordance with manufacturer's instructions at a rate of 20 pounds per 1,000 s.f.
 - 1. Apply after smooth raking of topsoil and prior to installation of sod.

2. Apply fertilizer no more than 48 hours before laying sod; one week prior to seeding.

B. Mix thoroughly into upper 2 to 4 inches of topsoil.

C. Lightly water to aid the dissipation of fertilizer.

3.5 FINISH GRADING

A. Bed Preparation: Immediately prior to sodding, the bed shall be prepared by breaking, disking, harrowing, blading, dragging or other approved methods.

1. The soil shall be thoroughly pulverized to a minimum depth of approximately four (4) inches and smoothed by means of raking or other approved methods.

2. Each area shall then be rolled in two directions perpendicular to each other with a light roller and then finely raked.

B. Raking: Raking shall be done by hand adjacent to structures, walks, curbing, and trees.

1. The finished surface shall be smooth, finely textured, free of all sticks, debris, rubbish, etc., and shall conform to the lines and grades indicated on the Drawings and/or as directed by the Architect.

3.6 SODDING

A. Moisten prepared surface immediately prior to laying sod.

B. Lay sod immediately on delivery to site within 24 hours after harvesting to prevent deterioration.

1. Lay sod tight with no open joints visible, and no overlapping; stagger end joints 12 inches minimum. Do not stretch or overlap sod pieces.

2. Lay smooth.

C. Place top elevation of sod 1/2 inch below adjoining curbs.

D. Water sodded areas immediately after installation. Saturate sod to 4 inches of soil.

3.7 MAINTENANCE

A. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.

B. Neatly trim edges and hand clip where necessary.

1. Immediately remove clippings after mowing and trimming.

- C. Water to prevent grass and soil from drying out.
- D. Weeds: Control growth of weeds.
- E. Sod Replacement: Immediately replace sod to areas which show deterioration or bare spots.
- F. Protect sodded areas with warning signs during maintenance period.

3.8 INSPECTION AND GUARANTEES

- A. Final Inspection:
 - 1. Inspection of work to determine its final acceptance will be made by the Architect.
 - 2. No plant materials will be accepted unless they are alive and healthy and all related work conforms to the drawings and specifications.

END OF SECTION 32 92 23

SECTION 33 30 00 – SANITARY SEWERAGE

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

- A. Drawings, General Conditions of the Contract for Construction, Supplementary Conditions of the Contract for Construction, including Specification Sections, apply to this Section.

1.2 SUMMARY

- A. Section Includes: Sanitary sewerage system piping and appurtenances from a point 5 feet outside the building to the existing sanitary sewer manhole adjacent to Lake Forest Boulevard per the plans.

1.3 SUBMITTALS

- A. Product Data: Submit product data for drainage piping specialties.
- B. Shop Drawings: Submit shop drawings for cast-in-place concrete sanitary sewer cleanouts, including frames and covers.
- C. Coordination Drawings: Submit coordination drawings showing pipe sizes and existing manholes, cleanouts, locations, and elevations. Include details of underground structures and connections. Show other piping in the same trench and clearances from sanitary sewerage system piping. Indicate interface and spatial relationship between piping and proximate structures. Show all conflicts and submit shop drawings of any conflict structures or offsets.

1.4 QUALITY ASSURANCE

- A. Environmental Compliance: Comply with applicable portions of local environmental agency regulations pertaining to sanitary sewerage systems.
- B. Utility Compliance: Comply with local utility regulations and standards pertaining to sanitary sewerage systems.

1.5 PROJECT CONDITIONS

- A. Site Information: Perform site survey, research public utility records, and verify existing utility locations. Verify that sanitary sewerage system piping may be installed in compliance with original design and referenced standards.
 - 1. Locate existing sanitary sewerage system piping and structures to tie into.

1.6 SEQUENCING AND SCHEDULING

- A. Coordinate connection and approval to sewer in accordance with Orleans Parish Public Works standards and Sewerage and Water Board of New Orleans.
- B. Coordinate with interior building sanitary drainage piping.
- C. Coordinate with other utility work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

- A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the Work include but are not limited to the following:
- B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
 - 1. Cleanouts:
 - a) Ancon, Inc.
 - b) Josam Co.
 - c) Smith (Jay R.) Mfg. Co.
 - d) Wade Div.; Tyler Pipe.
 - e) Zurn Industries, Inc.; Hydromechanics Div.
 - 2. Underground Warning Tapes:
 - a) Allen Systems, Inc.; Reef Industries, Inc.
 - b) Brady (W.H.) Co.; Signmark Div.
 - c) Calpico, Inc.
 - d) Carlton Industries, Inc.
 - e) EMED Co., Inc.
- C. Seton Name Plate Co.

2.2 PIPE AND FITTINGS

- A. General: Provide pipe and pipe fitting materials compatible with each other. Where more than one type of materials or products is indicated, selection is Installer's option.
- B. PVC (Polyvinyl Chloride) Sewer Pipe and Fittings: Solid wall, ASTM D 3034, SDR 35, for elastomeric gasket joints.
 - 1. Gaskets: ASTM F 477, elastomeric seal.

- C. Couplings: Elastomeric compression gasket, made to match pipe inside diameter or hub, and adjoining pipe outside diameter.
 - 1. Gaskets: ASTM F 477, elastomeric seal for plastic pipe. Gaskets for dissimilar or other pipe materials shall be compatible with pipe materials being joined.

2.3 STANDARD SEWER CLEANOUTS

- A. Cleanout Frames and Covers: ASTM A 536-80, Grade 65-45-12, heavy duty, ductile iron, 8 inch inside diameter by 7 to 9 inch riser, and 5 ½ inch diameter cover, indented top design, with lettering "SANITARY SEWER CLEANOUT" cast into cover.

2.4 MANHOLES

- A. Brick Manholes: Brick and mortar, of depth indicated. Sewerage and Water Board Standard
 - 1. Base, Channel, and Bench: Concrete.
Wall: ASTM C 32, Grade MS, manhole brick; 8-inch minimum thickness, 48 inch diameter, with tapered top for a 24-inch frame and cover. Thickness of section of wall deeper than 7 feet shall be 12 inches minimum.
 - 2. Mortar and Parging: ASTM C 270, Type S, using ASTM C 150, Type II Portland cement.
- B. Cast-In-Place Manholes: Reinforced concrete of dimensions and with appurtenances indicated.
 - 1. Bottom, Walls, and Top: Reinforced concrete.
 - 2. Channel and Bench: Concrete.
 - 3. Steps: Cast into sidewall at 12-inch intervals.
- C. Manhole Steps: Wide enough for an adult to place both feet on one step and designed to prevent lateral slippage off the step.
 - 1. Material: 34 wrought iron.
 - 2. Material: Steel-reinforced plastic.
- D. Manhole Frames and Covers: ASTM A48-83, Class 30, heavy-duty, cast iron, 24-inch inside diameter by 7- to 9-inch riser with 4-inch minimum width flange, and 26-inch-diameter cover, indented top design, with lettering "SEWER" cast into cover.
- E. Precast Concrete Manholes: ASTM C 478 or ASTM C 858, 5,000 psi (28 day) precast reinforced concrete, of depth indicated. Sections shall have provision for

rubber gasket joints. Base section slab shall have minimum thickness of 6 inches, riser sections shall have minimum thickness of 4 inches and be 48 inches inside diameter, and top section and grade rings shall match 24-inch frame and grate, unless otherwise indicated.

1. Base Section: Base riser section and separate base slab, or base riser section with integral floor.
2. Riser Sections: Sections shall be of lengths to provide depth indicated.
3. Top Section: Flat slab type with opening to match grade rings.
4. Grade Rings: Provide 2 or 3 reinforced concrete rings, of 6 to 9 inches total thickness.
5. Gaskets: ASTM C 443, rubber.
6. Steps: Cast into riser sidewall at 12- to 16-inch intervals.
7. Pipe Connectors: ASTM C 923, resilient, of size required, for each pipe connecting to base section.
8. Channel and Bench: Concrete.

2.5 CONCRETE AND REINFORCEMENT

- A. Concrete: Portland cement mix, 4,000 psi, unless indicated otherwise.
 1. Cement: ASTM C 150, Type II.
 2. Fine Aggregate: ASTM C 33, sand.
 3. Coarse Aggregate: ASTM C 33, crushed gravel.
 4. Water: Potable.
- B. Reinforcement: Steel conforming to the following:
 1. ASTM A 615 Grade 60

2.6 IDENTIFICATION

- A. Plastic Underground Warning Tapes: Polyethylene plastic tape, 6 inches wide by 4 mils thick, solid green in color with continuously printed caption in black letters "CAUTION - SANITARY SEWER LINE BURIED BELOW."

PART 3 - EXECUTION

3.1 PREPARATION OF FOUNDATION FOR BURIED SANITARY SEWERAGE SYSTEMS

- A. Grade trench bottom to provide a smooth, firm, stable, and rock free foundation, throughout the length of the pipe.
- B. Remove unstable, soft, and unsuitable materials at the surface upon which pipes are to be laid, and backfill with clean river sand to indicated level.

- C. Shape bottom of trench to fit bottom of pipe. Fill unevenness with tamped sand backfill. Dig bell holes at each pipe joint to relieve the bells of all loads and to ensure continuous bearing of the pipe barrel on the foundation.

3.2 PIPE APPLICATIONS FOR UNDERGROUND SANITARY SEWERS

- A. Pipe Sizes 4-10 Inch: PVC gasket joint sewer pipe and fittings.

3.3 INSTALLATION, GENERAL

- A. General Locations and Arrangements: Drawings (plans and details) indicate the general location and arrangement of the underground sanitary sewerage system piping. Location and arrangement of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical.
- B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.
- C. Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.
- D. Install piping pitched down in direction of flow, at minimum slope of 0.50 percent, except where indicated otherwise.
- E. Extend sanitary sewerage system piping to connect to building sanitary drains, of sizes and in locations indicated.

3.4 PIPE JOINT CONSTRUCTION AND INSTALLATION

- A. Join and install PVC pipe as follows:
 - 1. Pipe and gasketed fittings, joining with elastomeric seals in accordance with ASTM D 3212.
 - 2. Installation in accordance with ASTM D 2321.
- B. Join different types of pipe with standard manufactured couplings and fittings intended for that purpose.

3.5 MANHOLES

- A. General: Install manholes complete with accessories as indicated. Form continuous concrete or split pipe section channel and benches between inlets and outlet. Set tops of frames and covers flush with finish surface where manholes

occur in pavements. Elsewhere, set tops 3 inches above finish surface, unless otherwise indicated.

- B. Construct cast-in-place or precast concrete manholes as indicated.
- C. Provide rubber joint gasket complying with ASTM C 443 at joints of sections.
- D. Apply bituminous mastic coating at joints of sections.

3.6 CLEANOUTS

- A. Install cleanouts and extension from sewer pipe to cleanout at grade as indicated. Set cleanout frame and cover in concrete block 18 by 18 by 12 inches deep, except where location is in concrete paving. Set top of cleanout 1 inch above surrounding earth grade or flush with grade when installed in paving.

3.7 TAP CONNECTIONS

- A. Make connections to existing piping and underground structures so that finished work will conform as nearly as practicable to the requirements specified for new work.
- B. Use commercially manufactured wye fittings for piping branch connections. Remove section of existing pipe, install wye fitting into existing piping.
- C. Make branch connections from side into existing 8 inch piping by removing section of existing pipe and installing wye fitting, into existing piping.
- D. Protect existing piping and structures to prevent concrete or debris from entering while making tap connections. Remove debris, concrete, or other extraneous material that may accumulate.

3.8 INSTALLATION OF IDENTIFICATION

- A. Install continuous plastic underground warning tape during back-filling of trench for underground water service piping. Locate 6 to 8 inches below finished grade, directly over piping.

3.9 FIELD QUALITY CONTROL

- A. Testing: Perform testing of completed piping in accordance with local authorities having jurisdiction.
- B. Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.
 - 1. In large, accessible piping, brushes and brooms may be used for cleaning.

2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.
 3. Flush piping between manholes, if required by local authority, to remove collected debris.
- C. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.
1. Make inspections after pipe between manholes and manhole locations has been installed and approximately 2 feet of backfill is in place, and again at completion of project.
 2. If inspection indicates poor alignment, debris, displaced pipe, infiltration or other defects correct such defects, and reinspect.

END OF SECTION 33 30 00